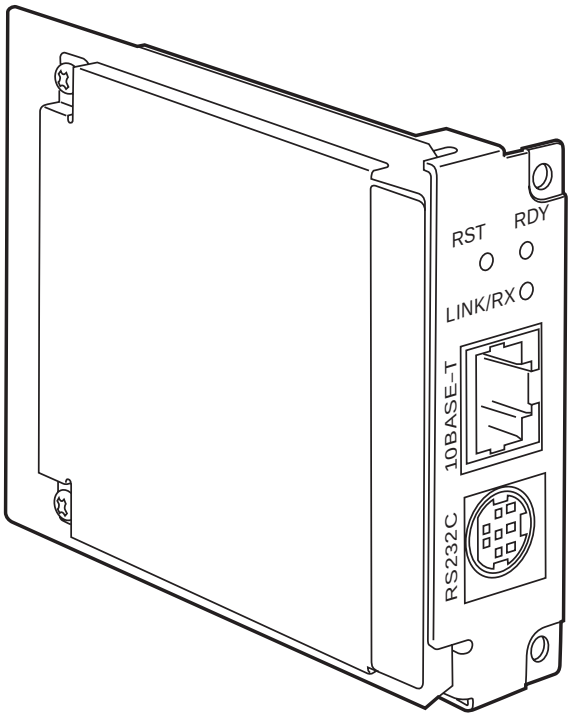
ORDER NO. BSD0203M908
D12

Service Manual

WEB card

AW-PB309P/E



Panasonic

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicans. Any attempt to service or repair the product or products deal with in this service manual by anyone else could result in serious injury or death.

AW-PB309P

Specifications and accessories

Specifications

Power supply	**:**	**DC 12 V (supplied from camera unit)**
Power consumption	**:**	**1.9 W**

▭ indicates safety information.

Dimensions (W × H × D)	**:**	**3-5/8″ × 2-3/4″ × 7/8″ (92 × 70 × 21.5 mm)**	
Weight	**:**	**0.22 lbs (100 g)**	
Image compression system	**:**	**JPEG**	
Image quality	**:**	**3-level setting**	
Screen size	**:**	**640 × 480, 320 × 240, 640 × 240**	
Image updating interval	**:**	**15 images/sec. for 320 × 240**	
		7.5 images/sec. for 640 × 480, 640 × 240	
I/O connectors	**:**	**10 BASE-T**	**RJ-45 connector × 1 (connected to Ethernet 10BASE-T)**
		RS-232C	**Mini DIN 8-pin connector × 1 (for camera, pan/tilt head control)**
LED displays	**:**	**RDY**	**Green LED indicating that the WEB card is operating**
		LINK/RX	**Green LED indicating Ethernet connection status, flashes during communication**
Switch	**:**	**RST**	**Pushbutton switch for restoring factory settings**
Usable temperature range	**:**	**14°F to 113°F (–10°C to +45°C)**	
Humidity	**:**	**30% to 90%**	

Accessories

Operating Instructions	**:**	**× 1**
Screws (6 mm long)	**:**	**× 2**
(8 mm long)	**:**	**× 4**

AW-PB309E

Specifications and accessories

Specifications

Power supply	:	DC 12 V (supplied from camera unit)
Power consumption	:	1.9 W

indicates safety information.

Dimensions (W × H × D)	:	92 × 70 × 21.5 mm	
Weight	:	100 g	
Image compression system	:	JPEG	
Image quality	:	3-level setting	
Screen size	:	640 × 480, 320 × 240, 640 × 240	
Image updating interval	:	15 images/sec. for 320 × 240	
		7,5 images/sec. for 640 × 480, 640 × 240	
I/O connectors	:	10 BASE-T	RJ-45 connector × 1 (connected to Ethernet 10BASE-T)
		RS-232C	Mini DIN 8-pin connector × 1 (for camera, pan/tilt head control)
LED displays	:	RDY	Green LED indicating that the WEB card is operating
		LINK/RX	Green LED indicating Ethernet connection status, flashes during communication
Switch	:	RST	Pushbutton switch for restoring factory settings
Usable temperature range	:	–10°C to +45°C	
Humidity	:	30% to 90%	

Accessories

Operating Instructions	:	× 1
Screws (6 mm long)	:	× 2
(8 mm long)	:	× 4

SAFETY PRECAUTIONS

GENERAL GUIDELINES

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
3. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

LEAKAGE CURRENT COLD CHECK

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohm meter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. The resistance value must be more than 5MΩ.

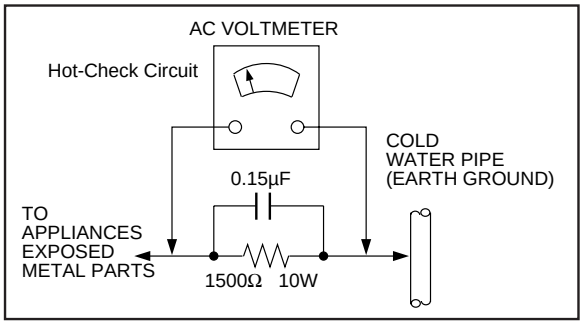


Figure1

LEAKAGE CURRENT HOT CHECK (See Figure 1)

1. Plug the AC cord directly into the AC outlet.
   Do not use an isolation transformer for this check.
2. Connect a 1.5kΩ , 10W resistor, in parallel with a 0.15µF capacitor, between each exposed metallic part on the set an a good earth ground such as a water pipe, as shown in Figure1.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverses the AC plug in the AC outlet repeat each of the above measurements.
6. The potential at any point should not exceed 0.15 volts RMS. A leakage current tester (Simpson Model 229 equivalent) may be used to make the hot checks, leakage current must not exceed 0.1 milliamp. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically sensitive (ED) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor “chip” components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground.
   Alternatively, obtain and wear a commercially available discharging wrist trap device, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device classified as “anti-static” can generate electrical charges sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it.
   (most replacement ES devices are package with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
   CAUTION : Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpacked replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device).

X-RADIATION

WARNING

1. The potential source of X-radiation in EVF sets is the High Voltage section and the picture tube.
2. When using a picture tube test jig for service, ensure that jig is capable of handling 10kV without causing x-radiation.

Note : It is important to use an accurate periodically calibrated high voltage meter.

3. Measure the High Voltage. The meter (electric type) reading should indicate 2.5kV, ± 0.15kV. If the meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure. To prevent an x-radiation possibility, it is essential to use the specified picture tube.

SECTION 1

SERVICE INFORMATION

CONTENTS

1. SOFTWARE VERSION UPGRADE

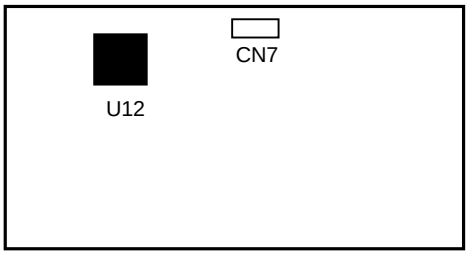
1-1. PLD Version Upgrade Procedure

The AW-PB309 uses PLD. At the time of a version upgrade, use the special tool, connect the respective connection connectors, and use the PLD writing software.

1-1-1. PLD Chart

Circuit board name	Connector	Number of pins'	PLD No.	Use quantity
MAIN P.C.Board	CN7	6P	ALTERA	1

MAIN P.C.Board



1-1-2. PLD Version up Method 1 (ALTERA)

A. Preparation

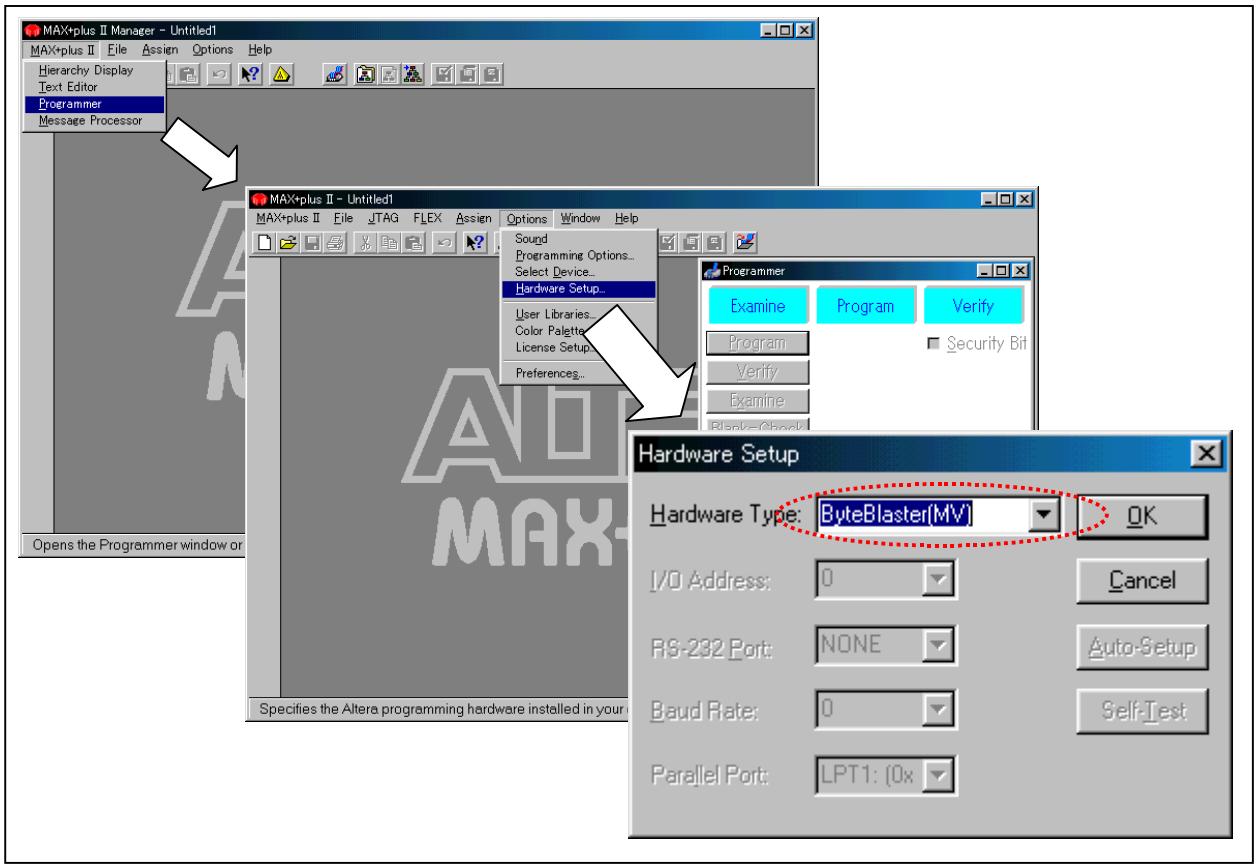
ITEM	REMARK
PLD WRITER	VFK1590 VFK1590P2L
D-sub 25pin-25pin Cable	Straight (Male - Female), Length : Within 1meter
Version Upgrade Software	MAX+plus II Software (Please Download from www.altera.com/support/devices/programing/sup-asap2.html)
Version Upgrade Data	TDF File or POF
Personal Computer	WINDOWS 95® or 98®

B. Connection

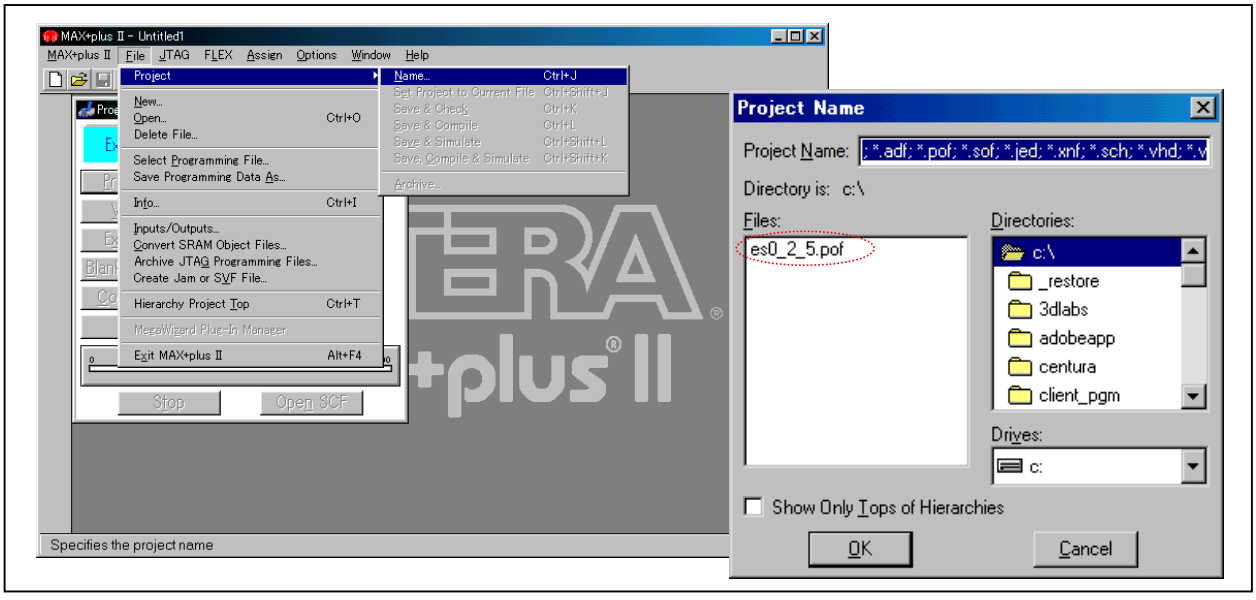
1. Connect the D-sub Cable between CN201 (for ALTERA) connector of the PLD WRITER (VFK1590) and Personal Computer (Printer port).
2. Connect the PLD WRITER Cable (VFK1590P2L) between connector on objective PCB and P2 connector of PLD WRITER.
3. Turn on AW-PB309 and Personal Computer (Windows mode).

C. Boot up the Ver. up Software and Ver. up Procedure

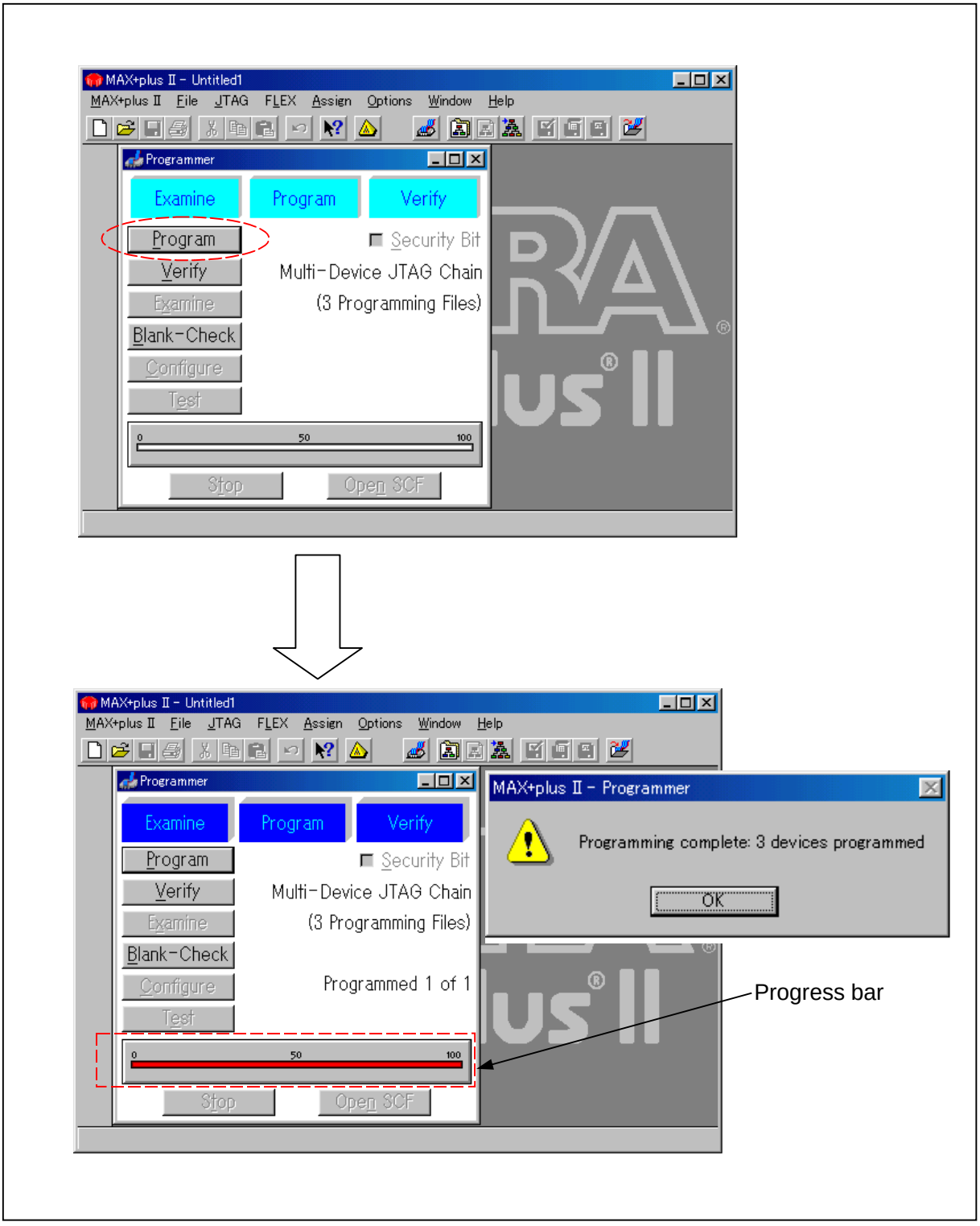
1. Boot up the **"MAX+plus II 9.6 programmer only"** Software.
2. On main window, select tab **"MAX+plus II"** and then **"Programmer"**.
3. On main window (Programmer window is displayed), select tab **"Option"** and then **"Hardware Setup"**.
4. On **Hardware Setup** dialog, set the **"Hardware Type"** to **"yte Blaster (MV) "**.



5. On main window, select tab **"File"**, **"Project"** and then **"Name"**.
6. On dialog of **Project Name**, select the **"tdf format file"** or **"pof format file"** and then perss **"OK"** button.



7. Click the **“Program”** button on Programmer dialog.
8. When Progress Bar reaches at point of **100**, the message “Programming Complete” appears, then PLD version upgrade is completed. Click **“OK”** button on the **Programming complete** message Dialog.



* MAX+PLUS are registered tradmarks of Altera Corporation.

* Windows95 and Windows98 are registered tradmarks of Microsoft Corporation.

1-2. OS, Basic Software and Application Software Installation

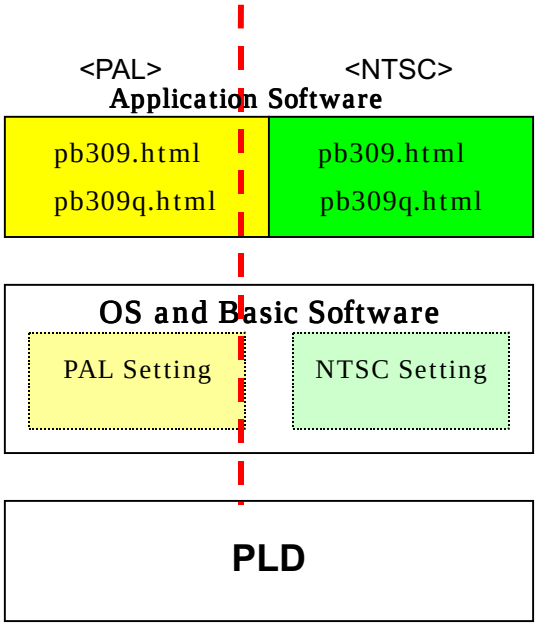
The PLD of AW-PB309 is constructed with Hardware (no programmed IC), OS, Basic Software and Application Software. When replace IC, reprogram of the OS and Basic Software, and Application Software installation are needed.

<Construction>

1) The Hardware of PLD is common use.

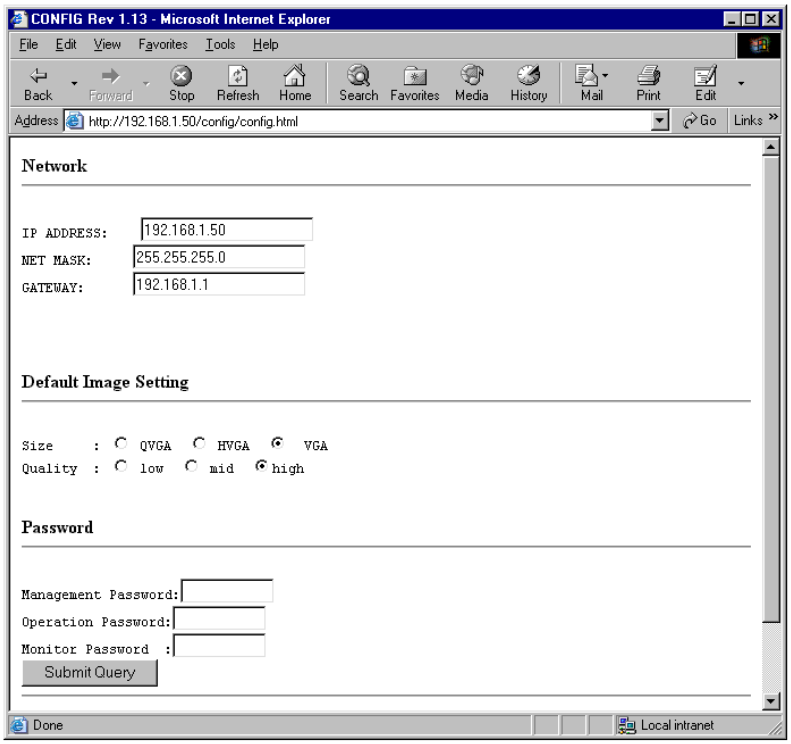
2) OS and basic Software is common use.
Program software via network and set the distribution.

3) Application Software of NTSC and PAL is different.
Install corresponded software.

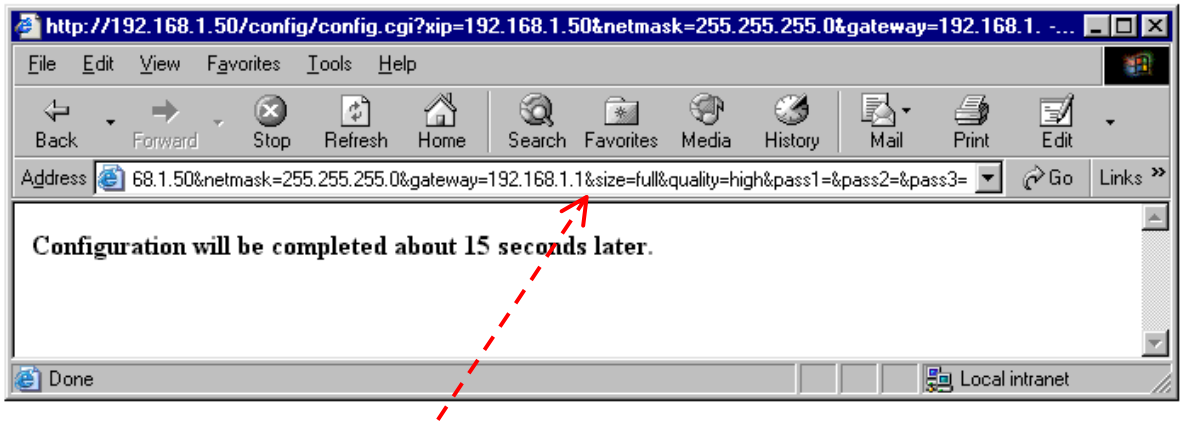


1-2-1. OS and Basic Software setting procedure

Display the config window and input the IP address.
(Input URL address http://192.168.1.50/config/config.html as factory default)



- Click “Submit Query” so that the following window will be appeared.



- Type following parameter after “&” character.

  For PAL camx=pal&

  For NTSC camx=nt&

- Press “Enter” key after input so that the setting is completed.

1-2-2. Application Software Installation

Move / Copy the Application Software (vvpb309nt) to your PC HDD.

This software has 4 files registered.

pb309.html ***pb309q.html*** imgsize.html Fdgs.class

*pb309.html, pb309q.html file is different specification due to PAL and NTSC.

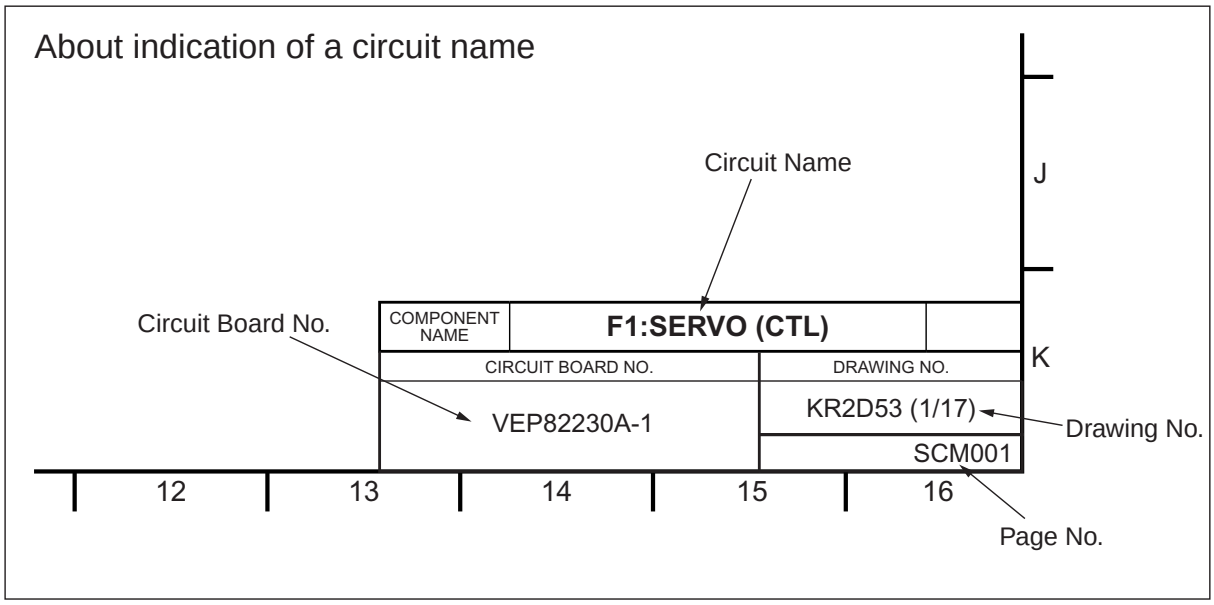
Renew or installaton procedure

- Execute MS-DOS prompt of Windows.
- Open the moved / copied folder which has Application Software (4 files).
- Login with ftp. In case of the IP address is 192.168.1.50,

  Type ftp 192.168.1.50
- Type “anonymous” when PC ask ID
- Delete previous file “delete pb309.html”
- Transfer update file (4 files) “put pb309.html”
- Confirm that the installation is completed by “dir” command.
- Exit ftp by “bye” command

SECTION 2

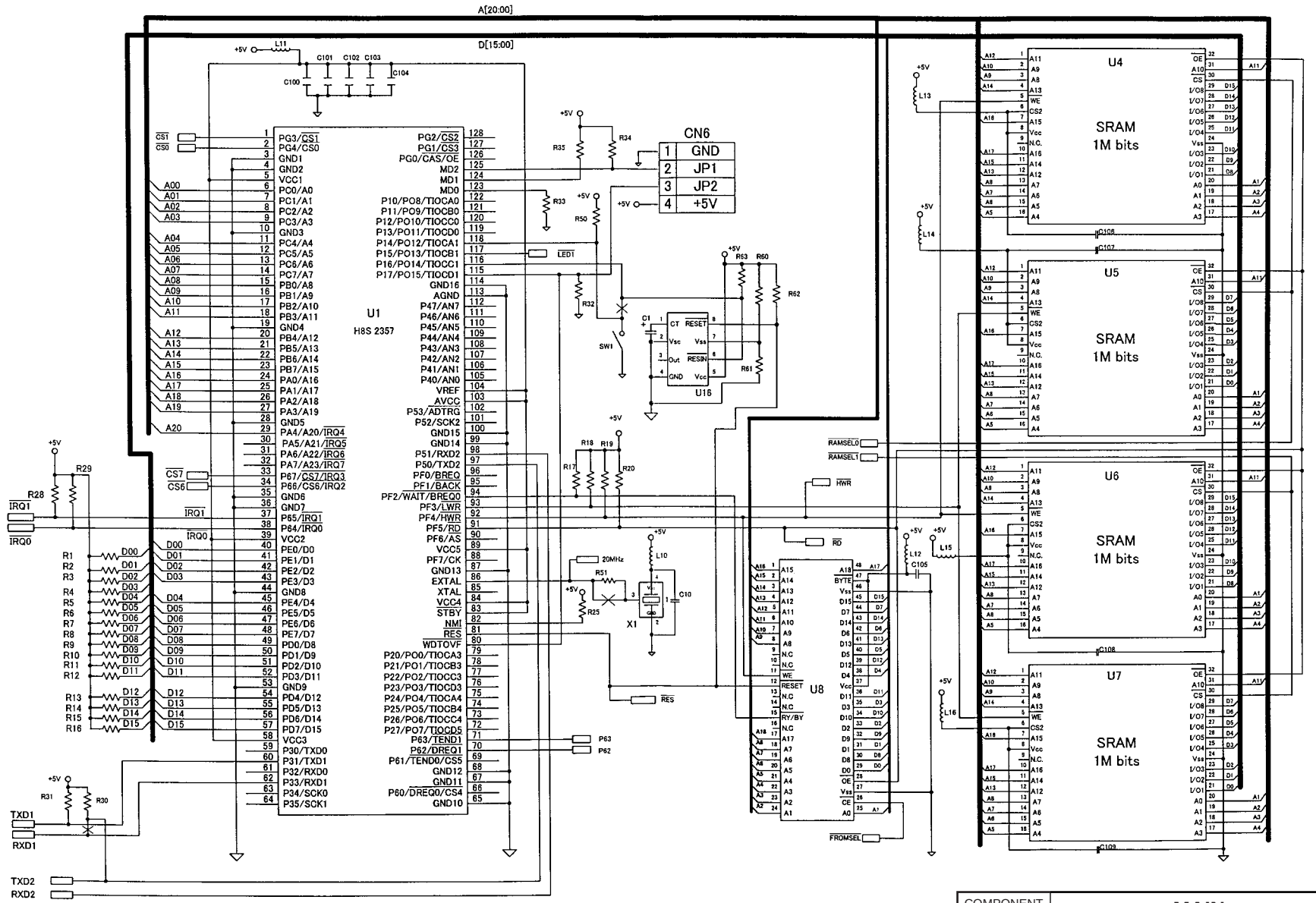
SCHEMATIC DIAGRAMS



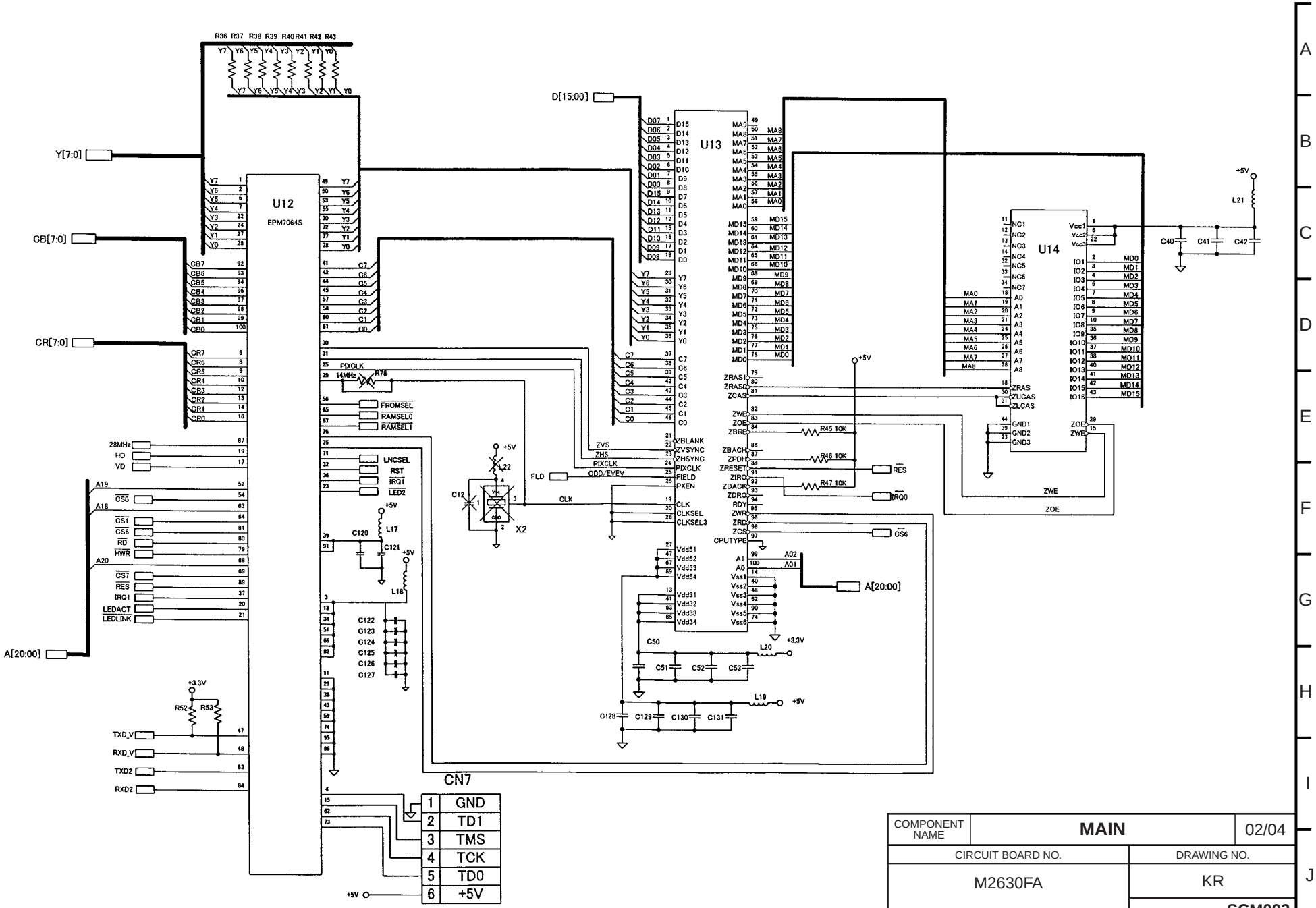
NOTE:
BE SURE TO MAKE YOUR ORDERS OF REPLACEMENT PARTS ACCORDING TO PARTS LIST

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

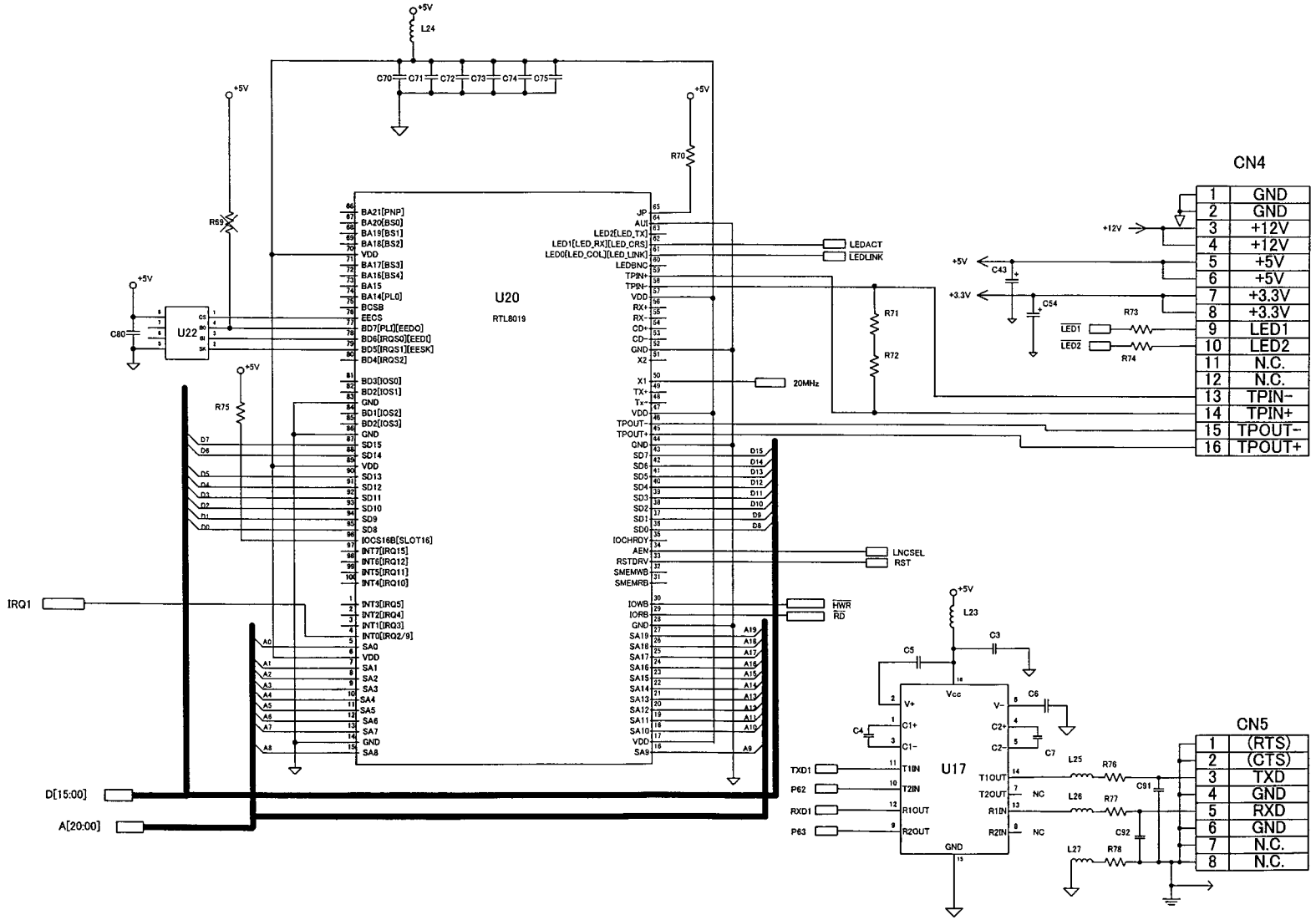
CONTENTS



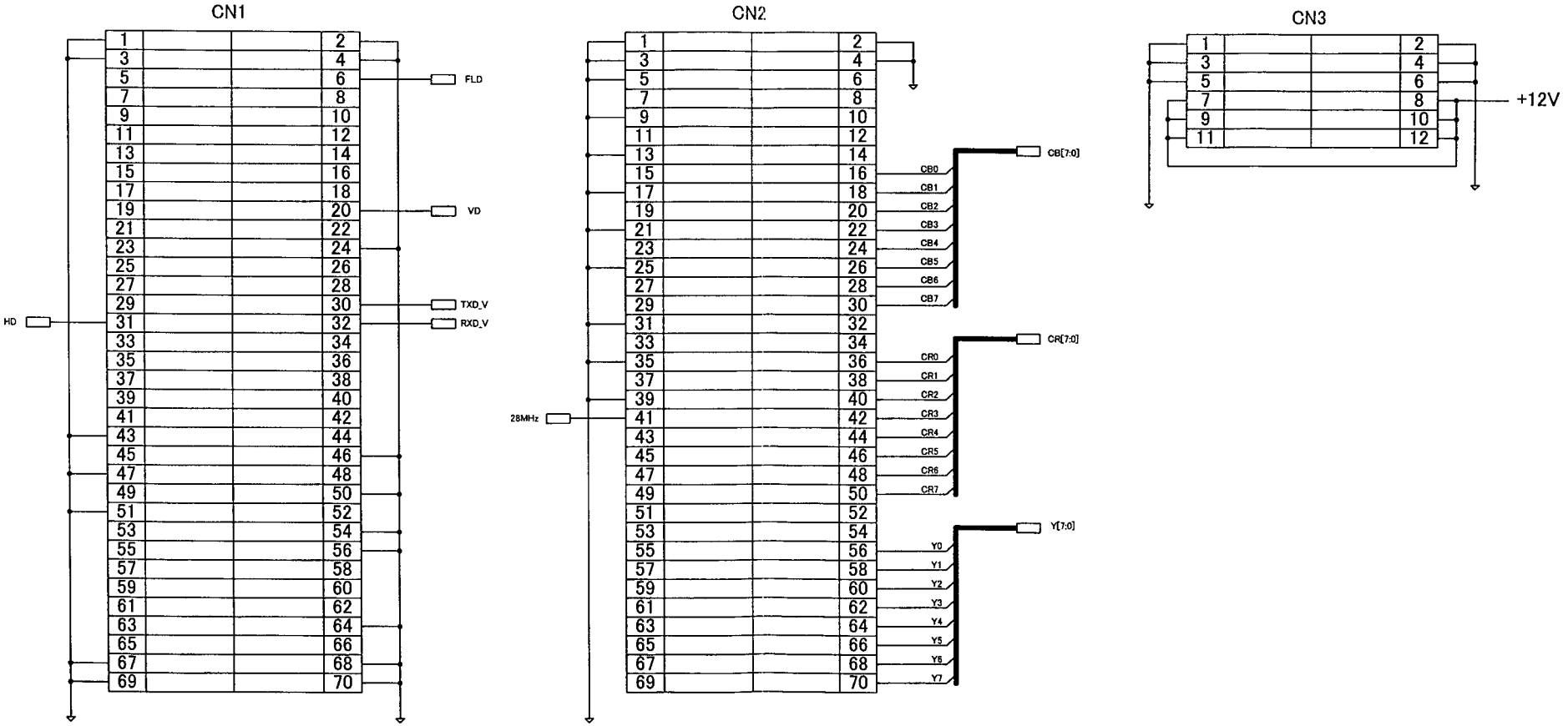
COMPONENT NAME	MAIN	01/04
CIRCUIT BOARD NO.		DRAWING NO.
M2630FA		KR
		SCM001



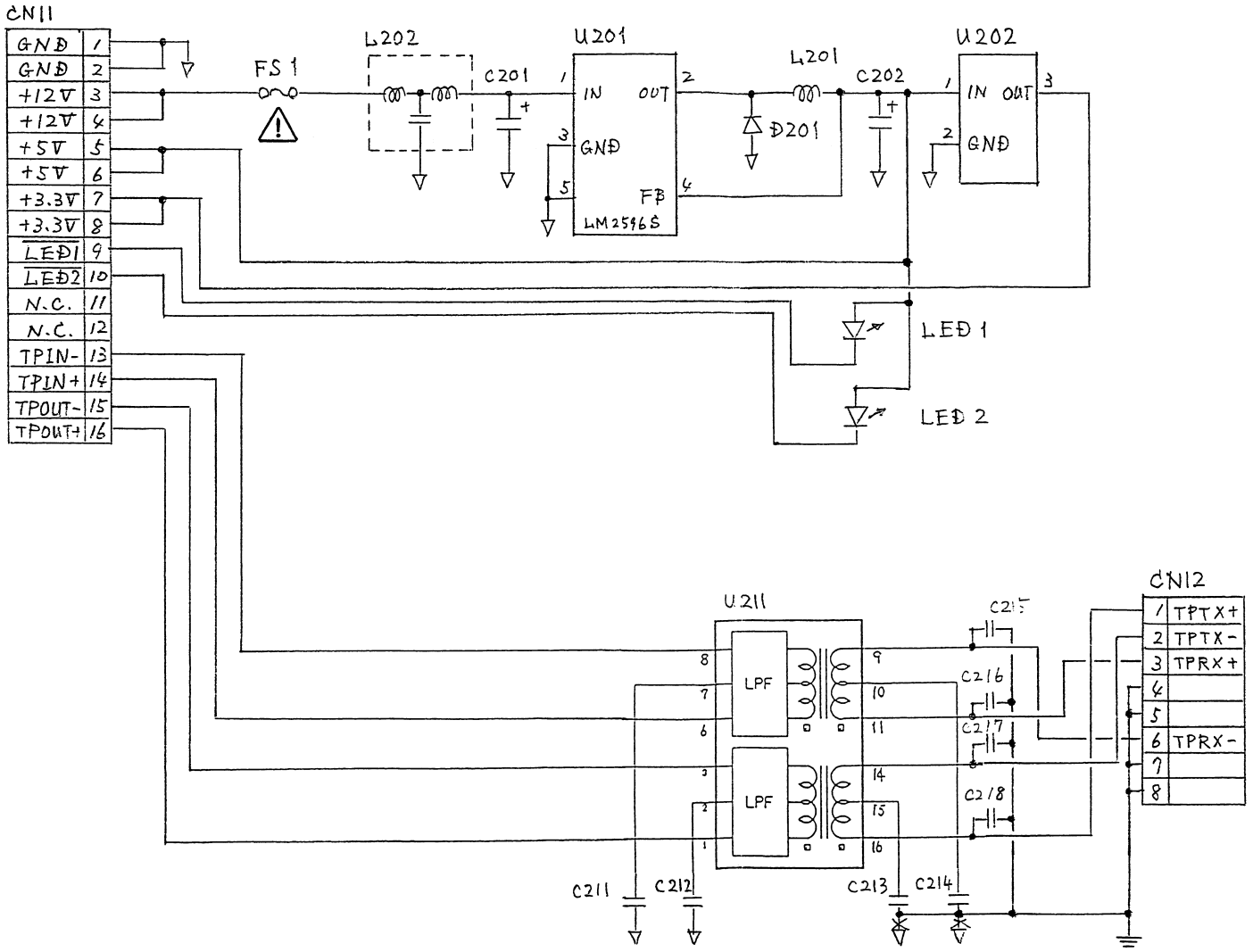
COMPONENT NAME	MAIN	02/04
CIRCUIT BOARD NO.		DRAWING NO.
M2630FA		KR
		SCM002



COMPONENT NAME	MAIN	03/04
CIRCUIT BOARD NO.		DRAWING NO.
M2630FA		KR
		SCM003



COMPONENT NAME	MAIN	04/04
CIRCUIT BOARD NO.		DRAWING NO.
M2630FA		KR
		SCM004



IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
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COMPONENT NAME	SUB	01/01
CIRCUIT BOARD NO.		DRAWING NO.
M2630FC		KR
		SCM005

SECTION 3

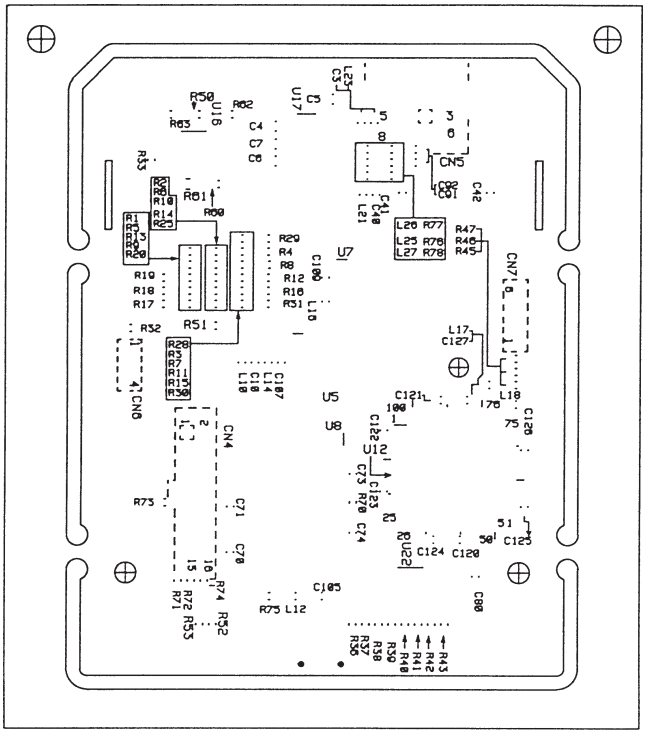
CIRCUIT BOARD DIAGRAMS

NOTE:
BE SURE TO MAKE YOUR ORDERS OF REPLACEMENT PARTS ACCORDING TO PARTS LIST

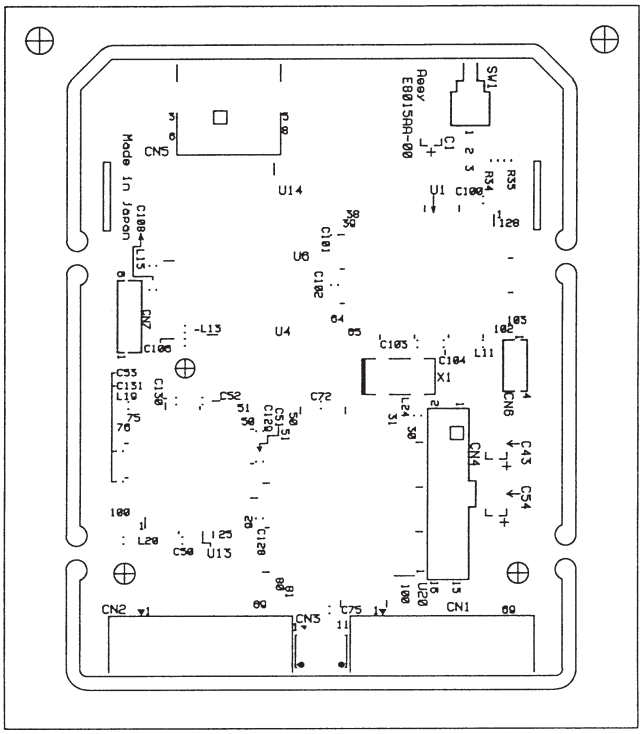
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

CONTENTS

MAIN P.C.BOARD (M2630FA)

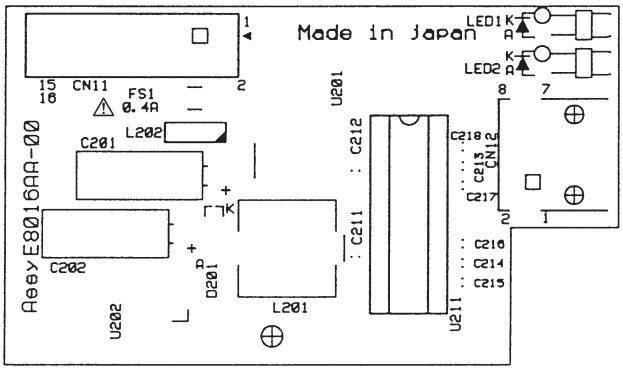


(FOIL SIDE)



(COMPONENT SIDE)

SUB P.C.BOARD (M2630FC)



(COMPONENT SIDE)

IMPORTANT SAFETY NOTICE:
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WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

SECTION 4

EXPLODED VIEWS
&
REPLACEMENT PARTS LISTS

Note:

1. *Be sure to make your orders of replacement parts according to this list.
2. Unless otherwise specified, all resistors are in OHMS, K=1,000 OHMS, all capacitors are in MICROFARADS (μF), P=μμF.
3. The P.C. Board untils marked with "■" shown below the main assembled parts.
4. The parts marked with Ⓔ on the exploded view show the electric parts.
5. IMPORTANT SAFETY NOTICE
   Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components, use only the same type.
6. The marking (RTL) indicates the retention time is limited for this item.
   After the discontinuation of this assembly in production, it will no longer be available.

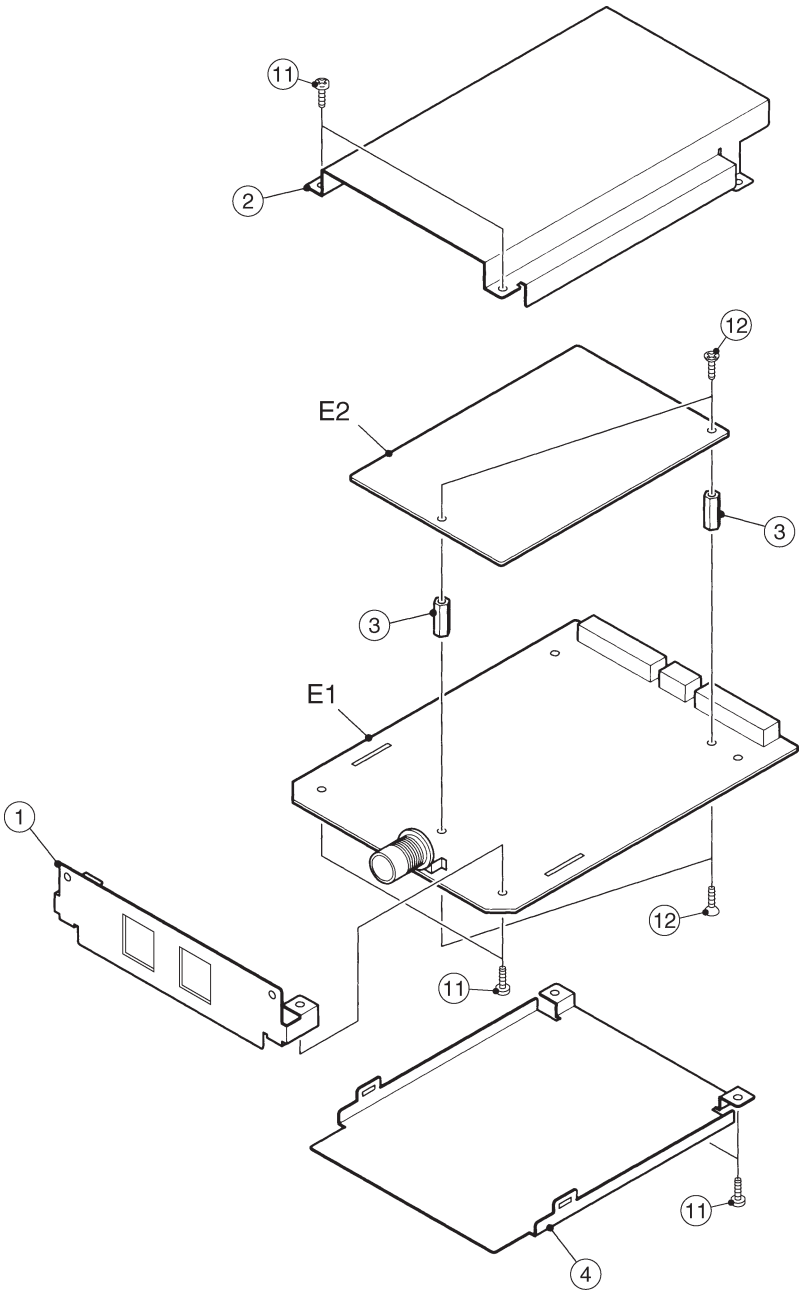
CONTENTS

CASING PARTS ASSEMBLY

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
1	M2635BF	FRONT CASE	1	
2	M2635AD	SHIELD CASE(UPPER)	1	
3	ASB2611	SPACER	2	
4	YW1C1A081A	SHIELD CASE(LOWER)	1	
11	XSB26+4FN	SCREW	4	
12	XSB26+4FN	SCREW	4	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks

CASING PARTS ASSEBLY



PACKING PARTS ASSEMBLY

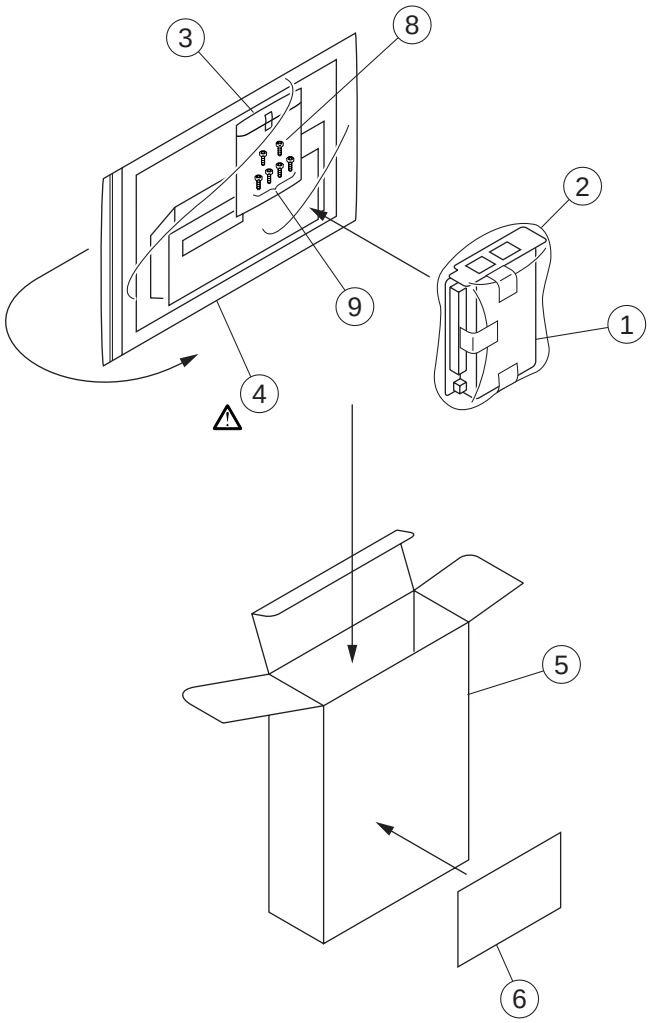
Components identified with the mark ⚠ have the special characteristic for safety.
When replacing any of these components, use only the same type.

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
1	SKY10X20	POLYETHYLENE BAG	1	
2	6D1A046A	AIR BAG	1	
3	YWT050803	POLYETHYLENE BAG	1	
⚠ 4	VQT9458	OPERATING INSTRUCTIONS	1	FOR AW-PB309P
⚠ 4	VQT9459	OPERATING INSTRUCTIONS	1	FOR AW-PB309E
5	6C1A074A	PACKING CASE	1	
6	VQL9823	PACKING LABEL	1	FOR AW-PB309P
6	VQL0A25	PACKING LABEL	1	FOR AW-PB309E
8	XSN26+6FN	SCREW	2	
9	XSN26+8FN	SCREW	4	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks

PACKING PARTS ASSEMBLY

Components identified with the mark ⚠ have the special characteristic for safety.
When replacing any of these components, use only the same type.



Components identified with the mark ⚠ have the special characteristic for safety.
When replacing any of these components, use only the same type.

ELECTRICAL REPLACEMENT PARTS LIST

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
■ E1	M2630FA	MAIN P.C.BOARD	1	(RTL)
■ E2	M2630FC	SUB P.C.BOARD	1	(RTL)
■ E1	M2630FA	MAIN P.C.BOARD	1	(RTL)
C1	267M1602475M	CAPACITOR	1	
C3	ECJ1VF1C104Z	C.CAPACITOR CH 16V 0.1U	1	
C4-C7	A6000CC	CAPACITOR	4	
C10	ECJ1VF1C104Z	C.CAPACITOR CH 16V 0.1U	1	
C40-42	ECJ1VF1C104Z	C.CAPACITOR CH 16V 0.1U	3	
C43	267M1602475M	CAPACITOR	1	
C50-53	ECJ1VF1C104Z	C.CAPACITOR CH 16V 0.1U	4	
C54	267M1602475M	CAPACITOR	1	
C70-75	ECJ1VF1C104Z	C.CAPACITOR CH 16V 0.1U	6	
C80	ECJ1VF1C104Z	C.CAPACITOR CH 16V 0.1U	1	
C91,92	ECUX1H101JCV	C.CAPACITOR CH 50V 100P	2	
C100-09	ECJ1VF1C104Z	C.CAPACITOR CH 16V 0.1U	10	
C120-31	ECJ1VF1C104Z	C.CAPACITOR CH 16V 0.1U	12	
CN1,N2	K1MR70B00001	CONNECTOR	2	
CN3	K1KA12B00002	CONNECTOR (MALE)	1	
CN4	K1KB16A00041	CONNECTOR (FEMALE)	1	
CN5	M2631JII	CONNECTOR	1	
CN6	K1KA04A00107	CONNECTOR (MALE)	1	
CN7	K1KA06A00224	CONNECTOR (MALE)	1	
L10-21	BLM11HA601SG	COIL	12	
L23-27	BLM11HA601SG	COIL	5	
R1-20	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	20	
R25	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R28-43	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	16	
R45-47	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	3	
R50-53	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	4	
R60-63	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	4	
R70-78	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	9	
SW1	K0F112B00007	SWITCH	1	
U1	HD64F2357F20	IC	1	
U4-U7	A6144LQ	IC	4	
U8	C3FBKD000189	IC	1	
U12	M2632PA	IC	1	
U13	LC82210	IC	1	
U14	IS416256-35T	IC	1	
U16	MB3771PF	IC	1	C0EBH0000082
U17	MAX202ECSE	IC	1	
U20	RTL8019AS	IC	1	
U22	CAT93C46SI	IC	1	
X1	A6014EV	CRYSTAL OSCILLATOR	1	
■ E2	M2630FC	SUB P.C.BOARD	1	(RTL)
C201	A2771CA	CAPACKTOR	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
C202	UPW1A221MEH	CAPACKTOR	1	
C211,12	ECUX1H101JCV	C.CAPACITOR CH 50V 100P	2	
C215-18	ECUX1H101JCV	C.CAPACITOR CH 50V 100P	4	
CN11	K1KA16A00018	CONNECTOR	1	
CN12	K2LC108B0018	CONNECTOR	1	
D201	B0HCMM000005	DIODE	1	
⚠ FS1	SSFC0.4A	FUSE	1	
L201	G1B101M00001	COIL 100UH	1	
L202	A1077EN	COIL	1	
LED1,D2	HLMP-1521	LED	2	
U201	M2596S-5.0	IC	1	
U202	LT1129CST3.3	IC	1	
U211	20F001N	IC	1	
		MISCELLANEOUS		
	M2635AQ	SHIELD PLATE	1	
	A1440JZ	SPACER	2	

Panasonic

HCD0203BYNH133

SECTION 1

SERVICE INFORMATION

CONTENTS

1. SOFTWARE VERSION UPGRADE

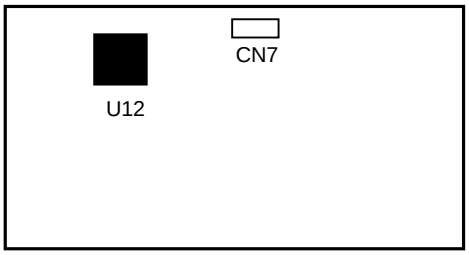
1-1. PLD Version Upgrade Procedure

The AW-PB309 uses PLD. At the time of a version upgrade, use the special tool, connect the respective connection connectors, and use the PLD writing software.

1-1-1. PLD Chart

Circuit board name	Connector	Number of pins'	PLD No.	Use quantity
MAIN P.C.Board	CN7	6P	ALTERA	1

MAIN P.C.Board



1-1-2. PLD Version up Method 1 (ALTERA)

A. Preparation

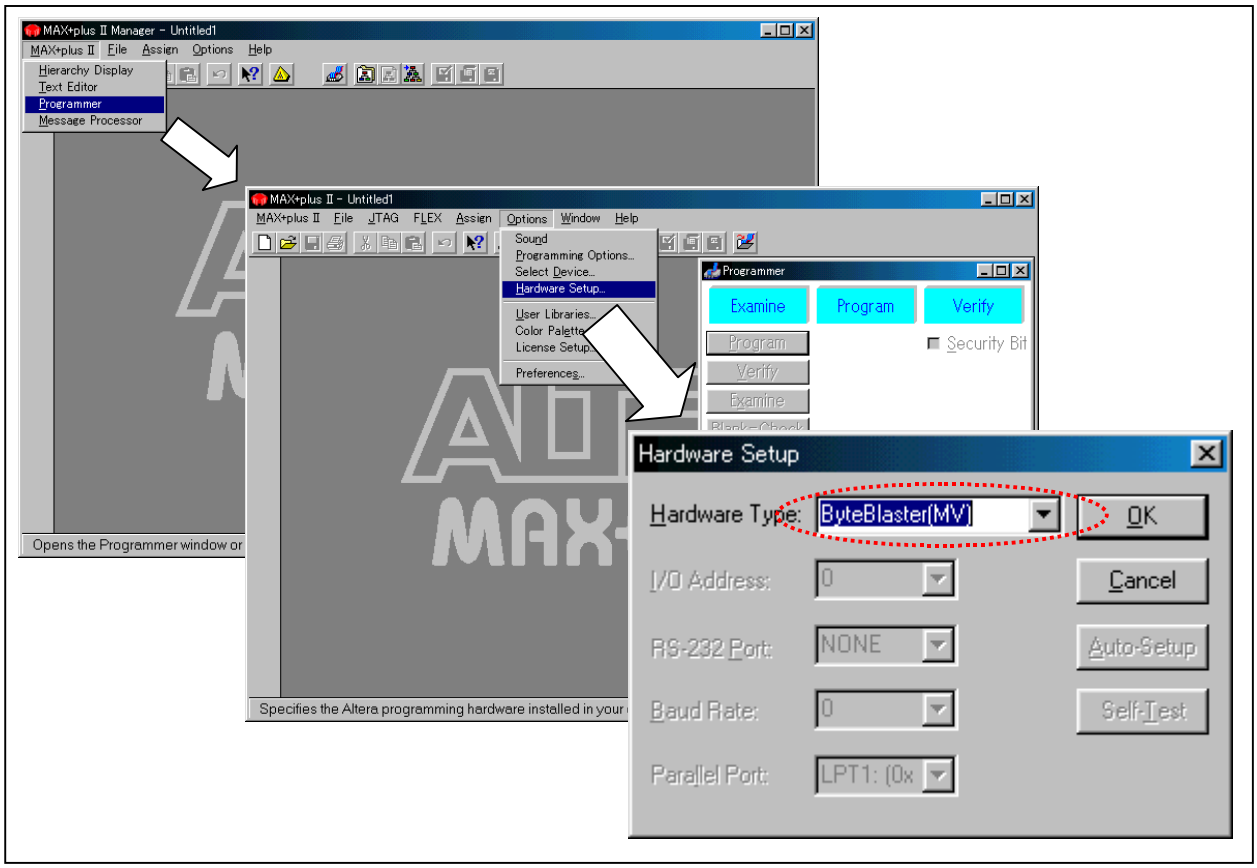
ITEM	REMARK
PLD WRITER	VFK1590 VFK1590P2L
D-sub 25pin-25pin Cable	Straight (Male - Female), Length : Within 1meter
Version Upgrade Software	MAX+plus II Software (Please Download from www.altera.com/support/devices/programing/sup-asap2.html)
Version Upgrade Data	TDF File or POF
Personal Computer	WINDOWS 95® or 98®

B. Connection

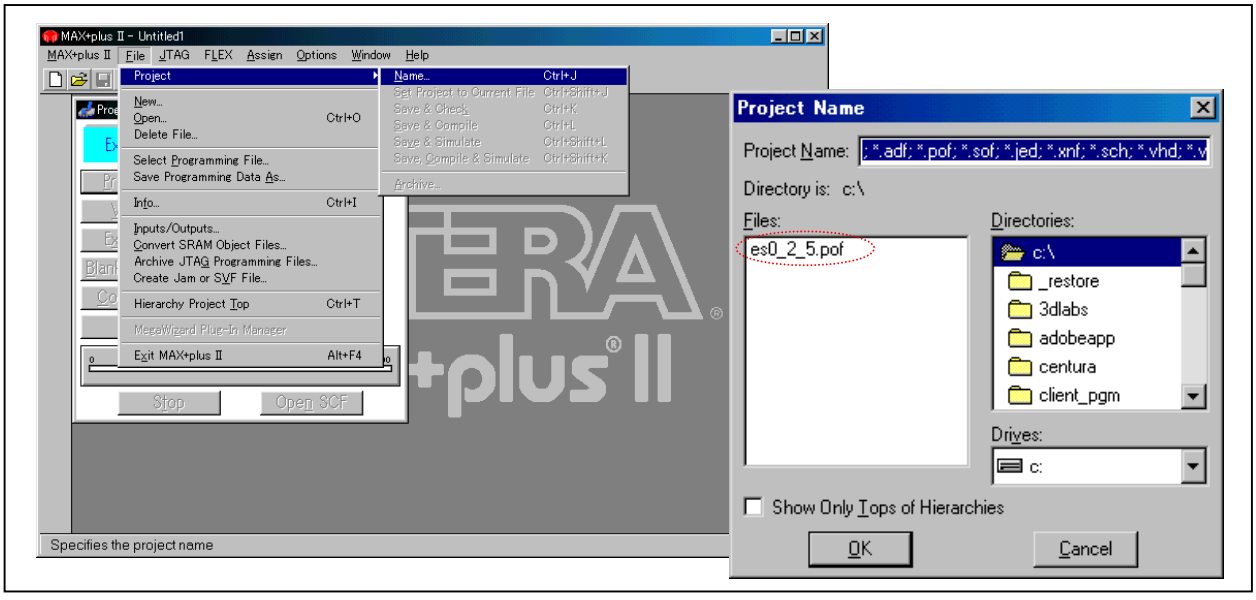
1. Connect the D-sub Cable between CN201 (for ALTERA) connector of the PLD WRITER (VFK1590) and Personal Computer (Printer port).
2. Connect the PLD WRITER Cable (VFK1590P2L) between connector on objective PCB and P2 connector of PLD WRITER.
3. Turn on AW-PB309 and Personal Computer (Windows mode).

C. Boot up the Ver. up Software and Ver. up Procedure

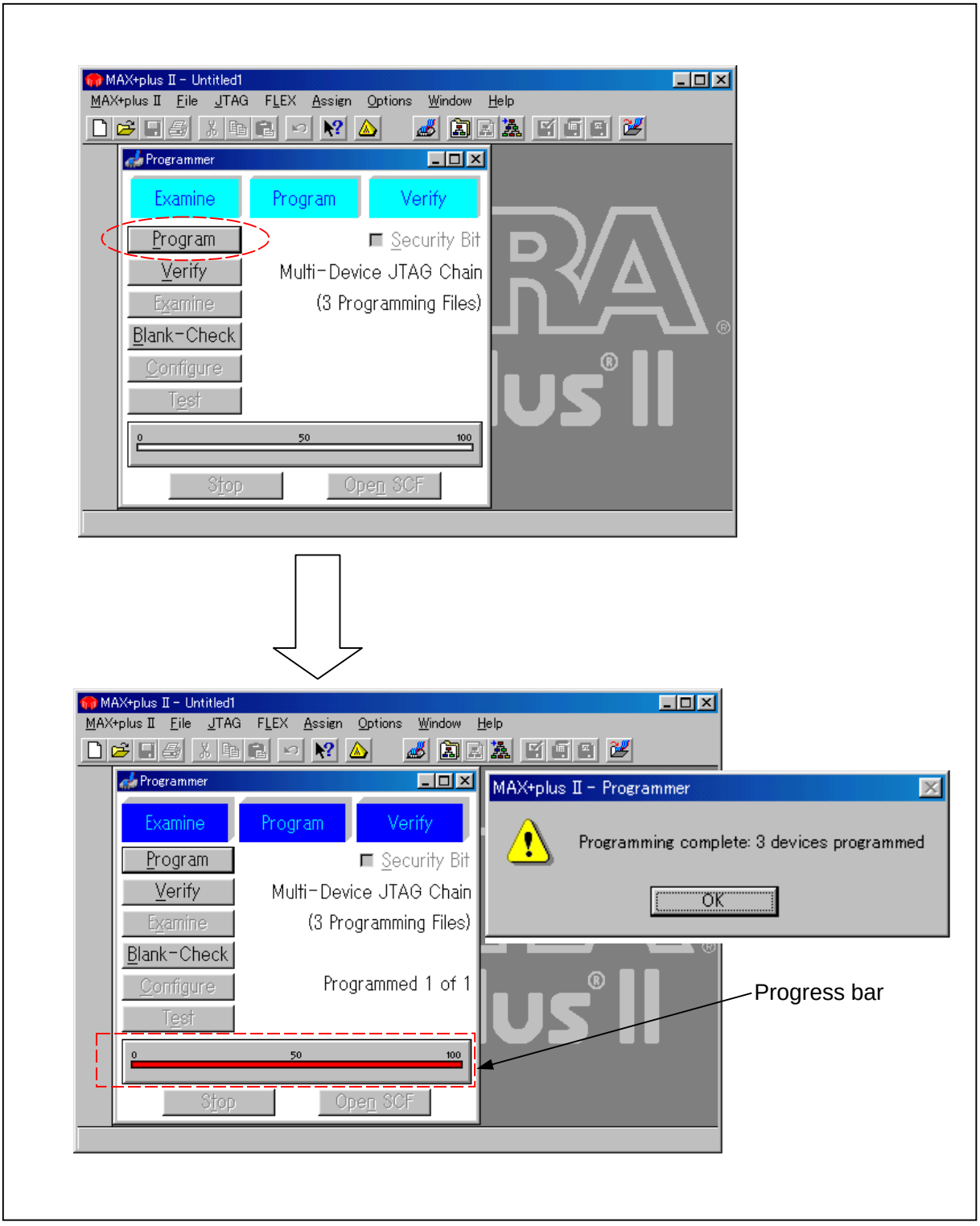
1. Boot up the **"MAX+plus II 9.6 programmer only"** Software.
2. On main window, select tab **"MAX+plus II"** and then **"Programmer"**.
3. On main window (Programmer window is displayed), select tab **"Option"** and then **"Hardware Setup"**.
4. On **Hardware Setup** dialog, set the **"Hardware Type"** to **"yte Blaster (MV) "**.



5. On main window, select tab **"File"**, **"Project"** and then **"Name"**.
6. On dialog of **Project Name**, select the **"tdf format file"** or **"pof format file"** and then perss **"OK"** button.



7. Click the **“Program”** button on Programmer dialog.
8. When Progress Bar reaches at point of **100**, the message “Programming Complete” appears, then PLD version upgrade is completed. Click **“OK”** button on the **Programming complete** message Dialog.



* MAX+PLUS are registered tradmarks of Altera Corporation.

* Windows95 and Windows98 are registered tradmarks of Microsoft Corporation.

1-2. OS, Basic Software and Application Software Installation

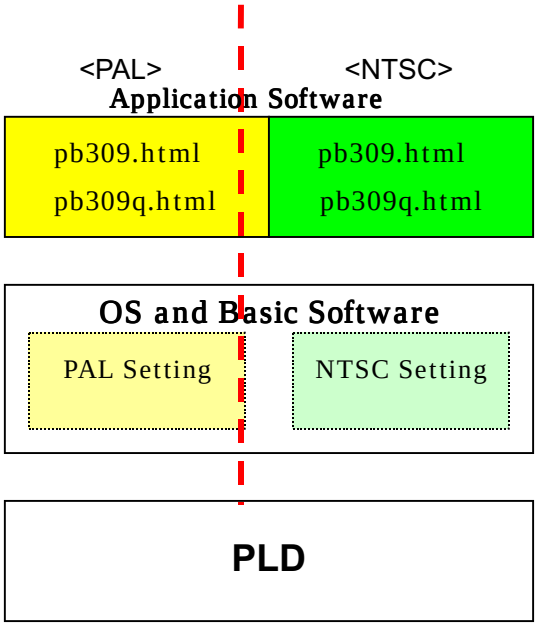
The PLD of AW-PB309 is constructed with Hardware (no programmed IC), OS, Basic Software and Application Software. When replace IC, reprogram of the OS and Basic Software, and Application Software installation are needed.

<Construction>

1) The Hardware of PLD is common use.

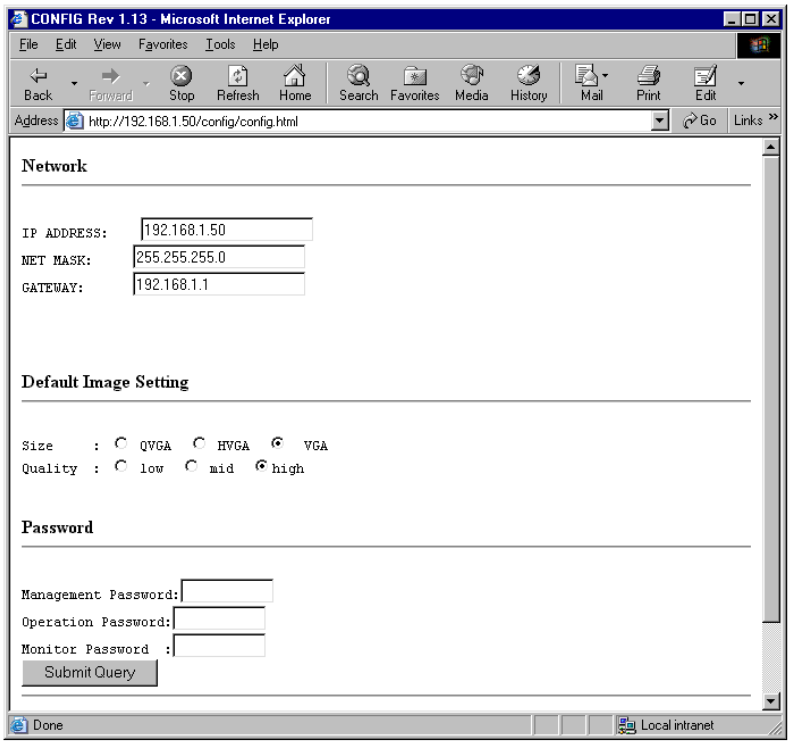
2) OS and basic Software is common use.
Program software via network and set the distribution.

3) Application Software of NTSC and PAL is different.
Install corresponded software.

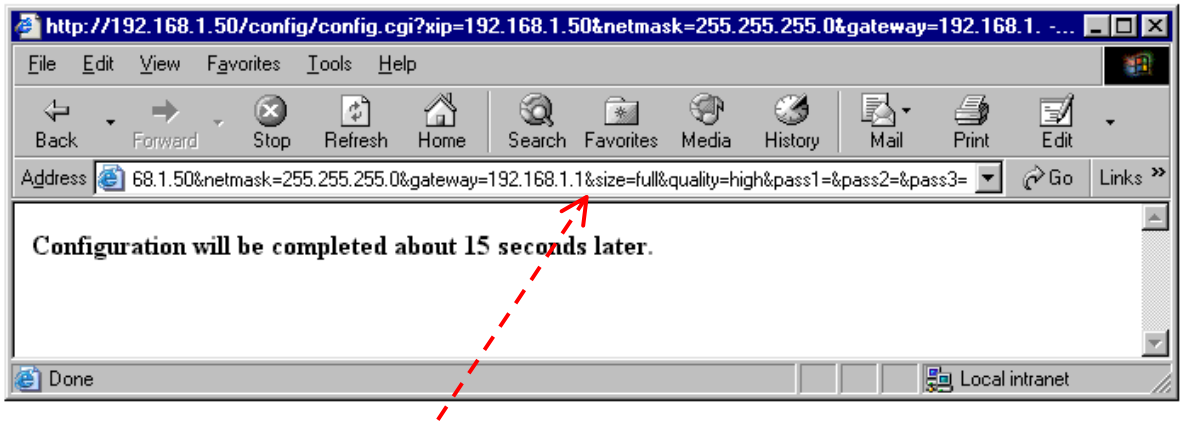


1-2-1. OS and Basic Software setting procedure

Display the config window and input the IP address.
(Input URL address http://192.168.1.50/config/config.html as factory default)



- Click “Submit Query” so that the following window will be appeared.



- Type following parameter after “&” character.

  For PAL camx=pal&

  For NTSC camx=nt&

- Press “Enter” key after input so that the setting is completed.

1-2-2. Application Software Installation

Move / Copy the Application Software (vvpb309nt) to your PC HDD.

This software has 4 files registered.

pb309.html ***pb309q.html*** imgsize.html Fdgs.class

*pb309.html, pb309q.html file is different specification due to PAL and NTSC.

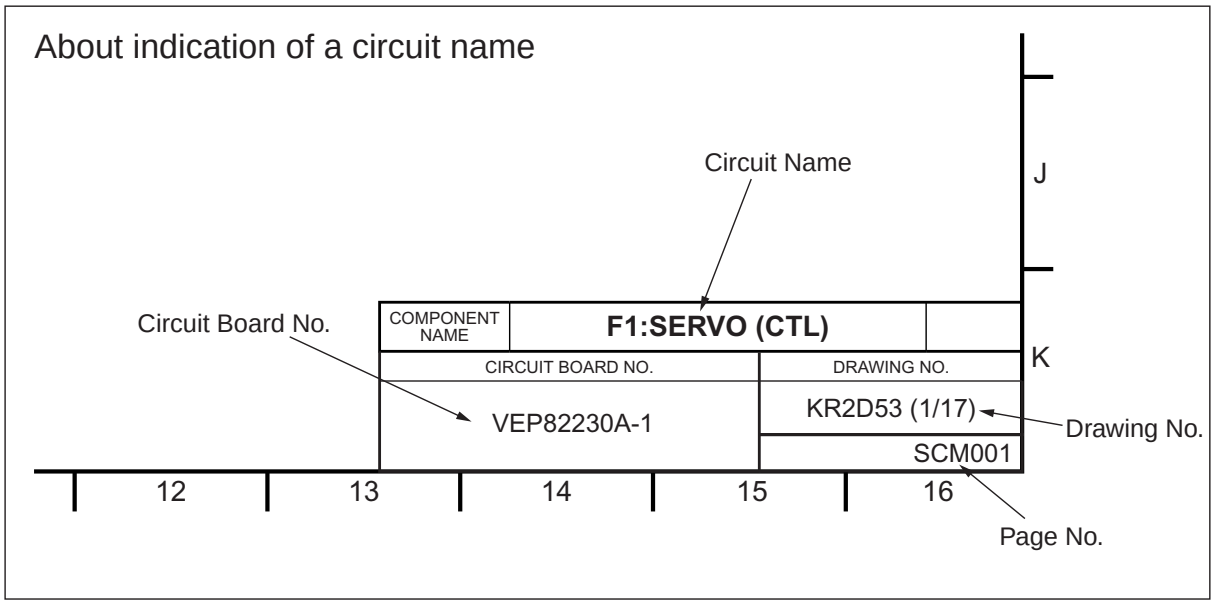
Renew or installaton procedure

- Execute MS-DOS prompt of Windows.
- Open the moved / copied folder which has Application Software (4 files).
- Login with ftp. In case of the IP address is 192.168.1.50,

  Type ftp 192.168.1.50
- Type “anonymous” when PC ask ID
- Delete previous file “delete pb309.html”
- Transfer update file (4 files) “put pb309.html”
- Confirm that the installation is completed by “dir” command.
- Exit ftp by “bye” command

SECTION 2

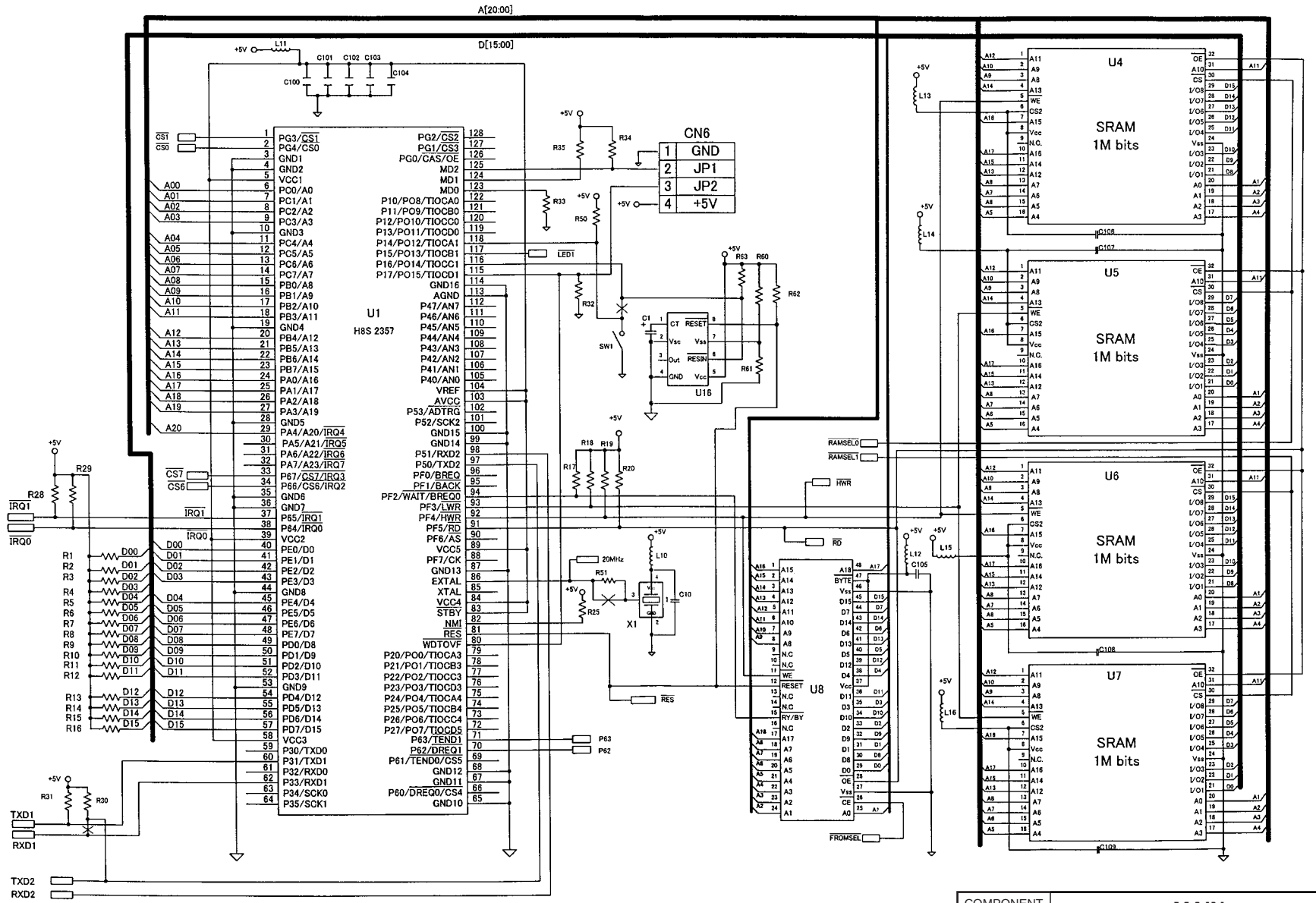
SCHEMATIC DIAGRAMS



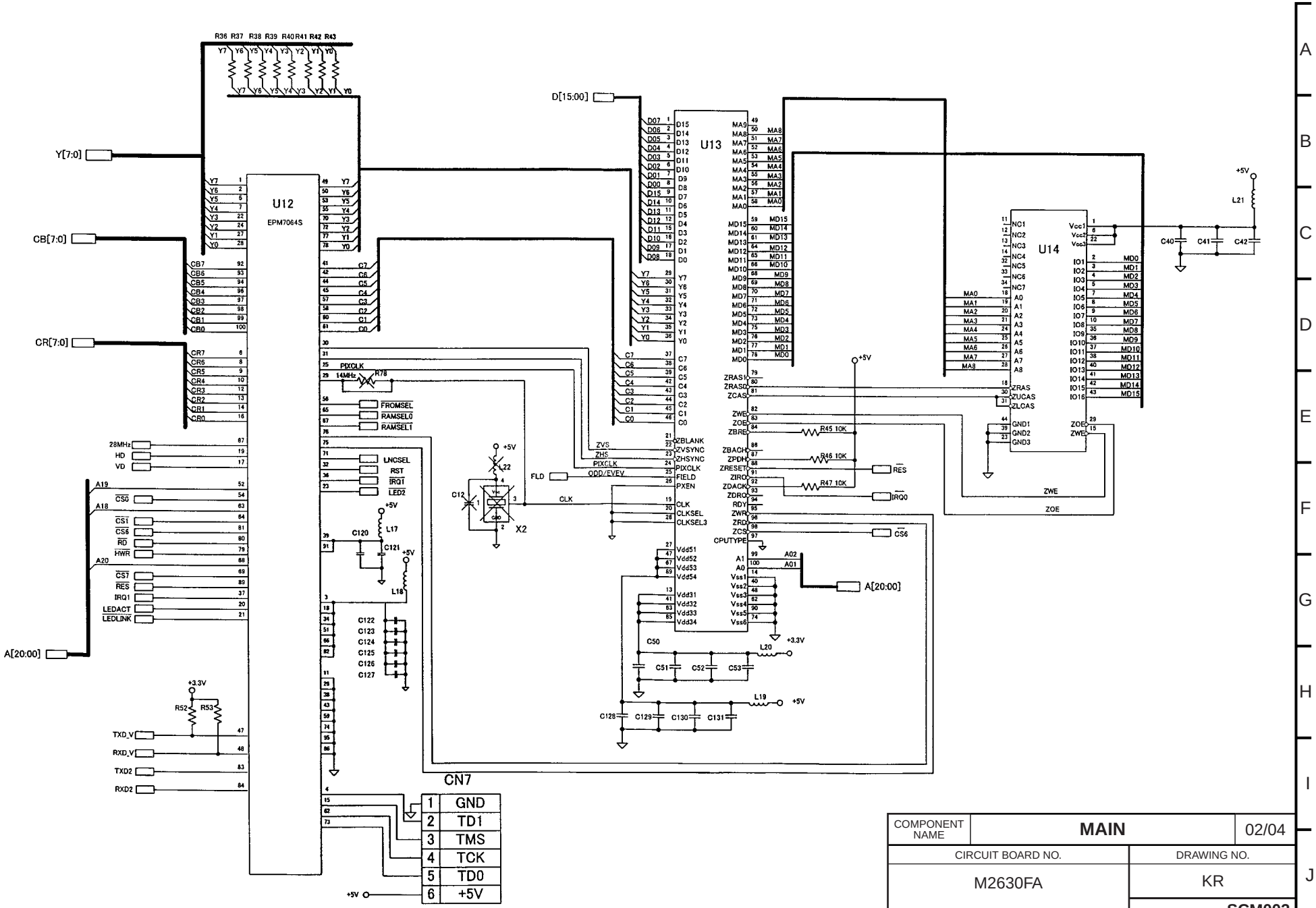
NOTE:
BE SURE TO MAKE YOUR ORDERS OF REPLACEMENT PARTS ACCORDING TO PARTS LIST

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

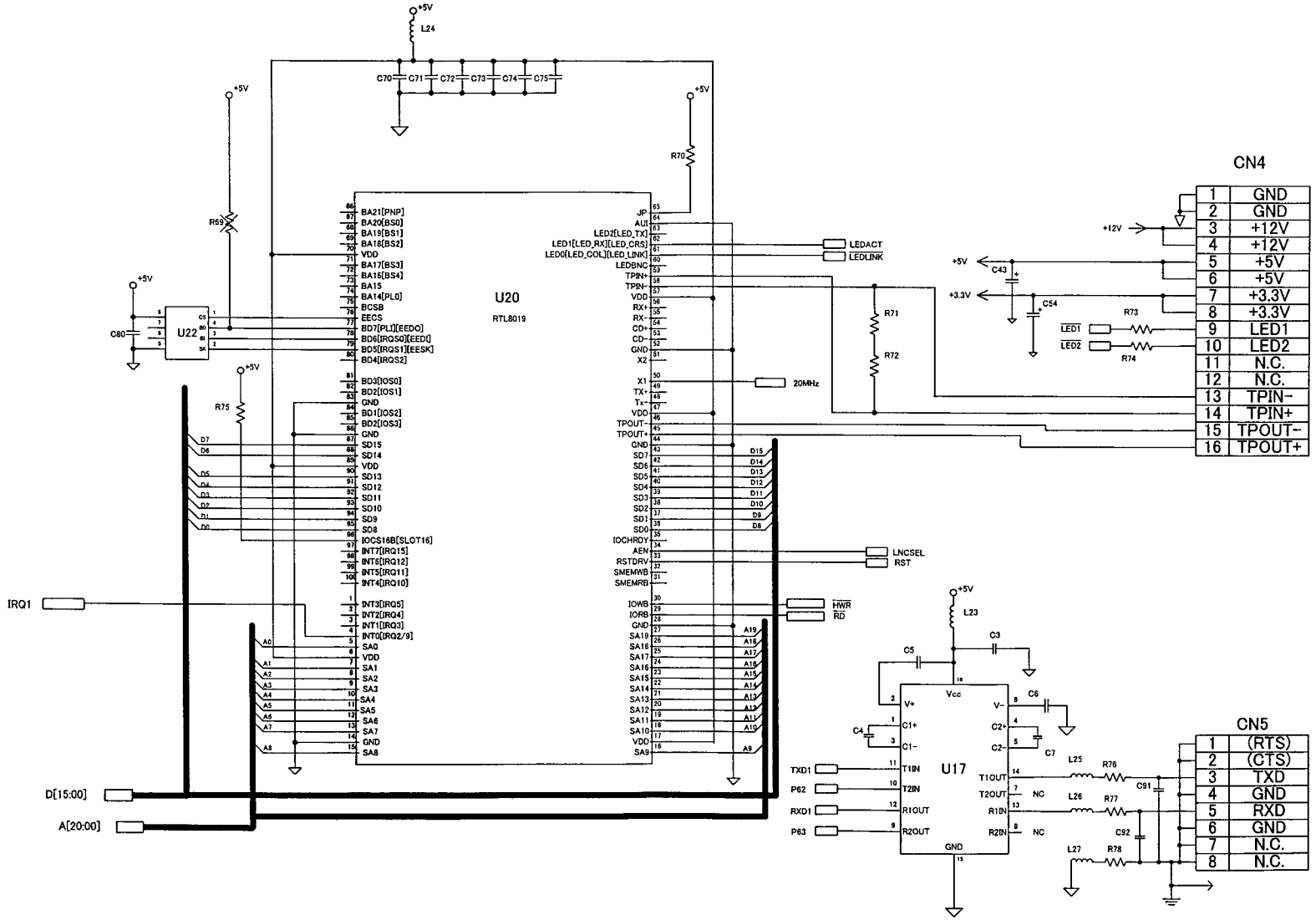
CONTENTS



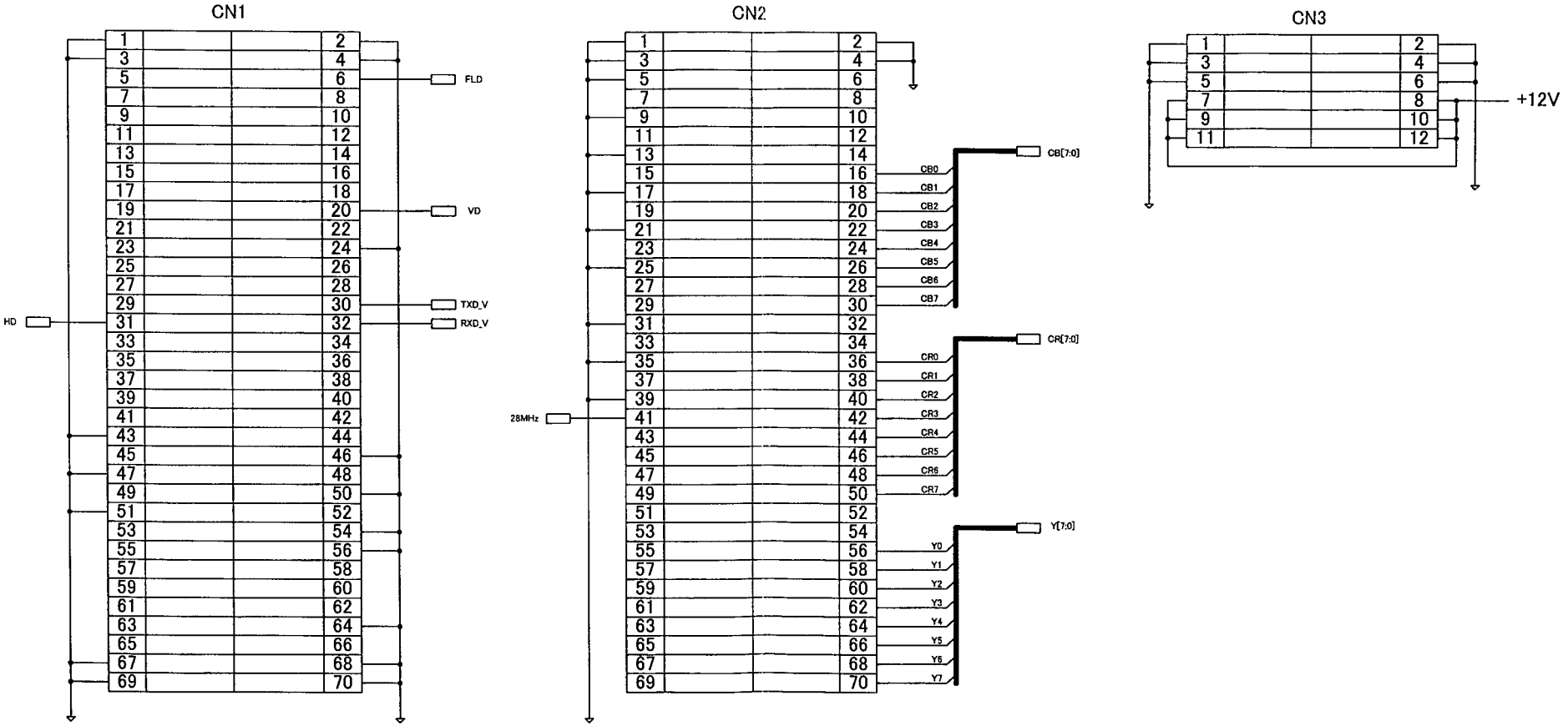
COMPONENT NAME	MAIN	01/04
CIRCUIT BOARD NO.		DRAWING NO.
M2630FA		KR
		SCM001



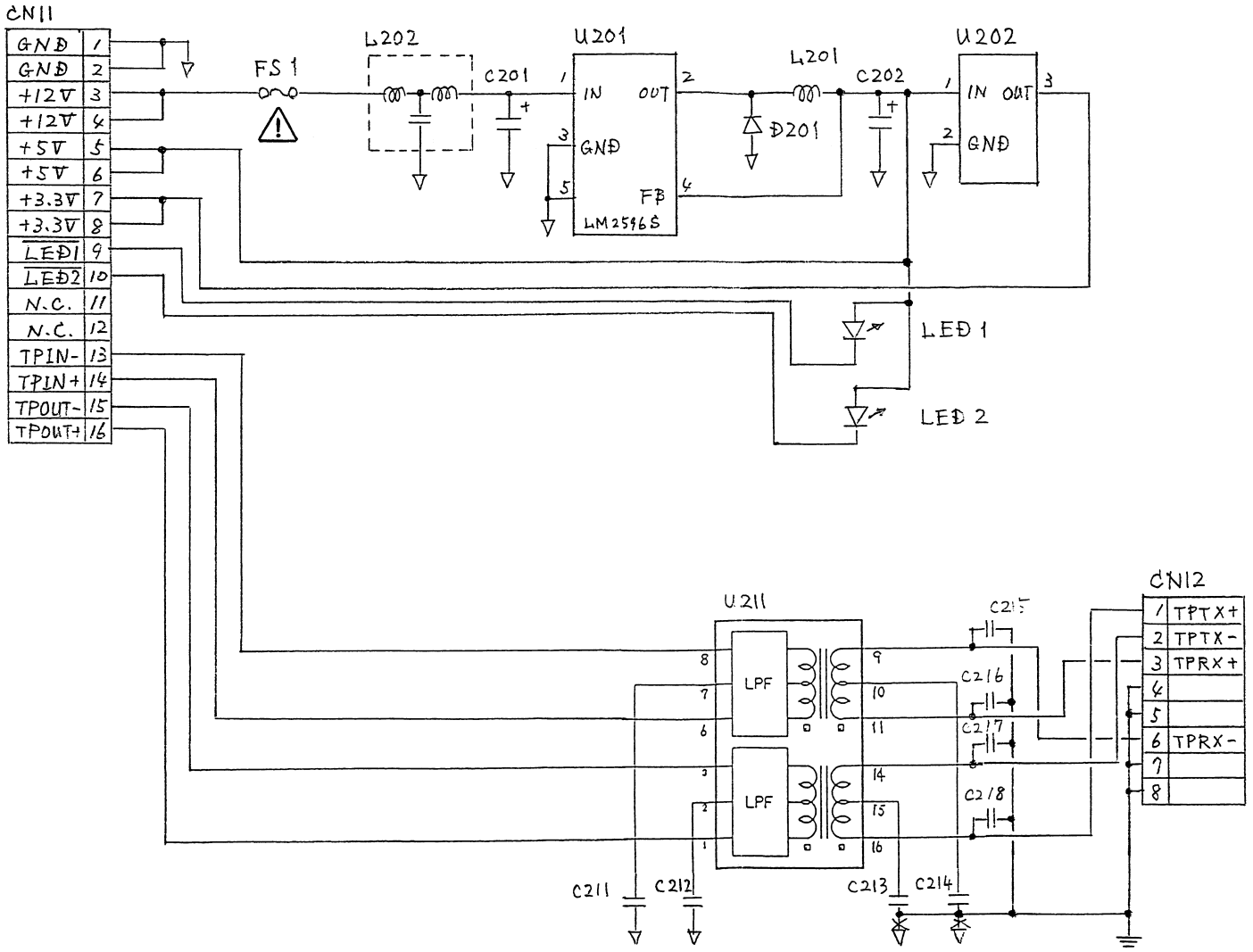
COMPONENT NAME	MAIN	02/04
CIRCUIT BOARD NO.		DRAWING NO.
M2630FA		KR
		SCM002



COMPONENT NAME	MAIN	03/04
CIRCUIT BOARD NO.		DRAWING NO.
M2630FA		KR
		SCM003



COMPONENT NAME	MAIN	04/04
CIRCUIT BOARD NO.		DRAWING NO.
M2630FA		KR
		SCM004



IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

COMPONENT NAME	SUB	01/01
CIRCUIT BOARD NO.		DRAWING NO.
M2630FC		KR
		SCM005

SECTION 3

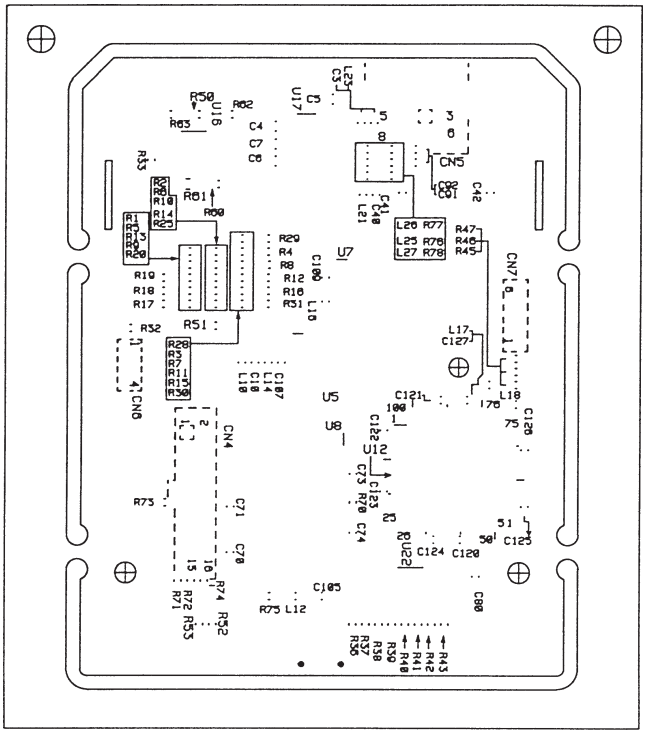
CIRCUIT BOARD DIAGRAMS

NOTE:
BE SURE TO MAKE YOUR ORDERS OF REPLACEMENT PARTS ACCORDING TO PARTS LIST

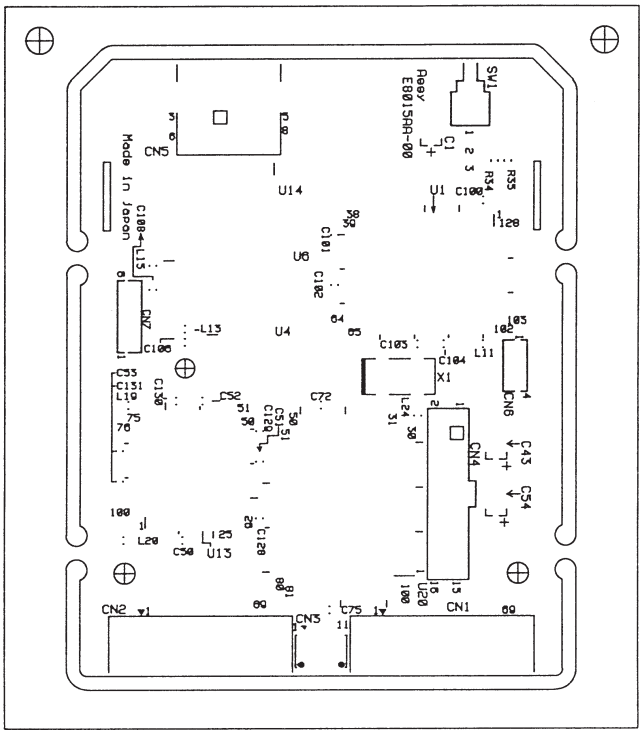
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

CONTENTS

MAIN P.C.BOARD (M2630FA)

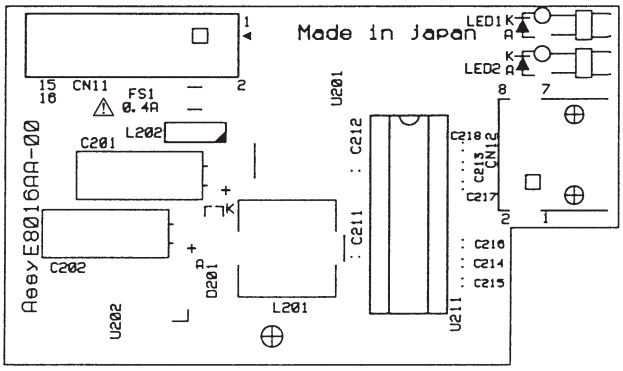


(FOIL SIDE)



(COMPONENT SIDE)

SUB P.C.BOARD (M2630FC)



(COMPONENT SIDE)

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

SECTION 4

EXPLODED VIEWS
&
REPLACEMENT PARTS LISTS

Note:

1. *Be sure to make your orders of replacement parts according to this list.
2. Unless otherwise specified, all resistors are in OHMS, K=1,000 OHMS, all capacitors are in MICROFARADS (μF), P=μμF.
3. The P.C. Board untils marked with "■" shown below the main assembled parts.
4. The parts marked with Ⓔ on the exploded view show the electric parts.
5. IMPORTANT SAFETY NOTICE
   Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components, use only the same type.
6. The marking (RTL) indicates the retention time is limited for this item.
   After the discontinuation of this assembly in production, it will no longer be available.

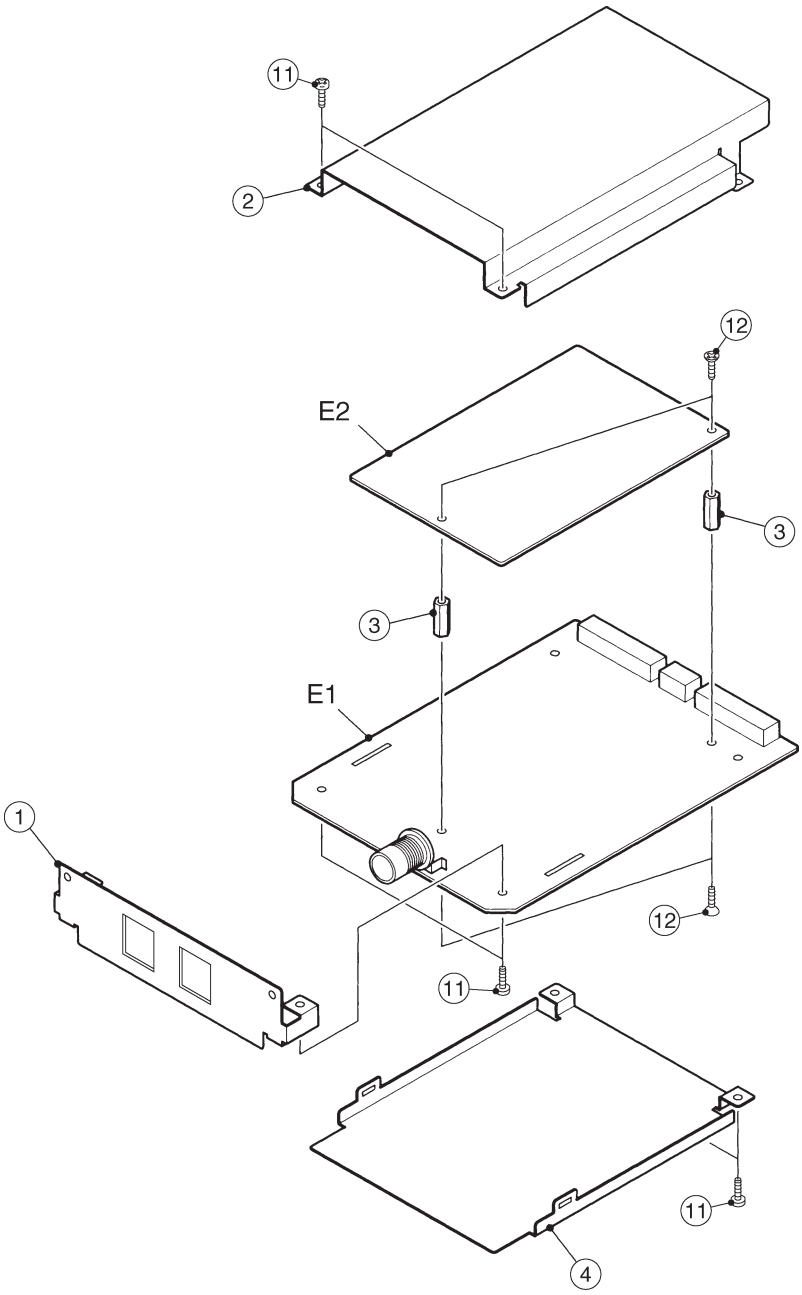
CONTENTS

CASING PARTS ASSEMBLY

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
1	M2635BF	FRONT CASE	1	
2	M2635AD	SHIELD CASE(UPPER)	1	
3	ASB2611	SPACER	2	
4	YW1C1A081A	SHIELD CASE(LOWER)	1	
11	XSB26+4FN	SCREW	4	
12	XSB26+4FN	SCREW	4	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks

CASING PARTS ASSEBLY



PACKING PARTS ASSEMBLY

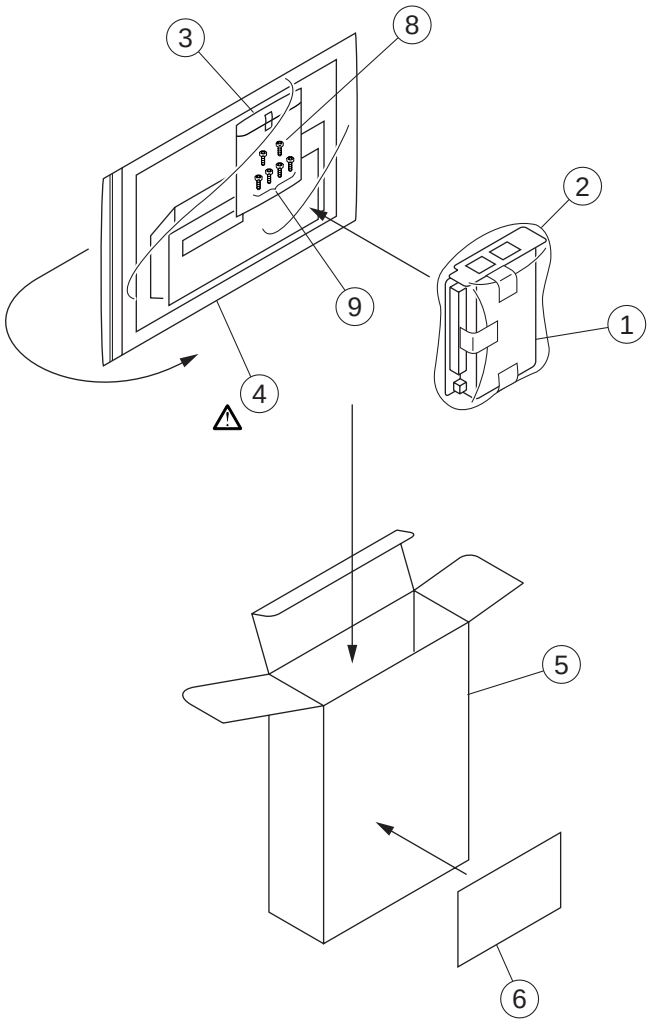
Components identified with the mark ⚠ have the special characteristic for safety.
When replacing any of these components, use only the same type.

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
1	SKY10X20	POLYETHYLENE BAG	1	
2	6D1A046A	AIR BAG	1	
3	YWT050803	POLYETHYLENE BAG	1	
⚠ 4	VQT9458	OPERATING INSTRUCTIONS	1	FOR AW-PB309P
⚠ 4	VQT9459	OPERATING INSTRUCTIONS	1	FOR AW-PB309E
5	6C1A074A	PACKING CASE	1	
6	VQL9823	PACKING LABEL	1	FOR AW-PB309P
6	VQL0A25	PACKING LABEL	1	FOR AW-PB309E
8	XSN26+6FN	SCREW	2	
9	XSN26+8FN	SCREW	4	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks

PACKING PARTS ASSEMBLY

Components identified with the mark ⚠ have the special characteristic for safety.
When replacing any of these components, use only the same type.



Components identified with the mark ⚠ have the special characteristic for safety.
When replacing any of these components, use only the same type.

ELECTRICAL REPLACEMENT PARTS LIST

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
■ E1	M2630FA	MAIN P.C.BOARD	1	(RTL)
■ E2	M2630FC	SUB P.C.BOARD	1	(RTL)
■ E1	M2630FA	MAIN P.C.BOARD	1	(RTL)
C1	267M1602475M	CAPACITOR	1	
C3	ECJ1VF1C104Z	C.CAPACITOR CH 16V 0.1U	1	
C4-C7	A6000CC	CAPACITOR	4	
C10	ECJ1VF1C104Z	C.CAPACITOR CH 16V 0.1U	1	
C40-42	ECJ1VF1C104Z	C.CAPACITOR CH 16V 0.1U	3	
C43	267M1602475M	CAPACITOR	1	
C50-53	ECJ1VF1C104Z	C.CAPACITOR CH 16V 0.1U	4	
C54	267M1602475M	CAPACITOR	1	
C70-75	ECJ1VF1C104Z	C.CAPACITOR CH 16V 0.1U	6	
C80	ECJ1VF1C104Z	C.CAPACITOR CH 16V 0.1U	1	
C91,92	ECUX1H101JCV	C.CAPACITOR CH 50V 100P	2	
C100-09	ECJ1VF1C104Z	C.CAPACITOR CH 16V 0.1U	10	
C120-31	ECJ1VF1C104Z	C.CAPACITOR CH 16V 0.1U	12	
CN1,N2	K1MR70B00001	CONNECTOR	2	
CN3	K1KA12B00002	CONNECTOR (MALE)	1	
CN4	K1KB16A00041	CONNECTOR (FEMALE)	1	
CN5	M2631JII	CONNECTOR	1	
CN6	K1KA04A00107	CONNECTOR (MALE)	1	
CN7	K1KA06A00224	CONNECTOR (MALE)	1	
L10-21	BLM11HA601SG	COIL	12	
L23-27	BLM11HA601SG	COIL	5	
R1-20	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	20	
R25	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R28-43	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	16	
R45-47	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	3	
R50-53	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	4	
R60-63	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	4	
R70-78	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	9	
SW1	K0F112B00007	SWITCH	1	
U1	HD64F2357F20	IC	1	
U4-U7	A6144LQ	IC	4	
U8	C3FBKD000189	IC	1	
U12	M2632PA	IC	1	
U13	LC82210	IC	1	
U14	IS416256-35T	IC	1	
U16	MB3771PF	IC	1	C0EBH0000082
U17	MAX202ECSE	IC	1	
U20	RTL8019AS	IC	1	
U22	CAT93C46SI	IC	1	
X1	A6014EV	CRYSTAL OSCILLATOR	1	
■ E2	M2630FC	SUB P.C.BOARD	1	(RTL)
C201	A2771CA	CAPACKTOR	1	

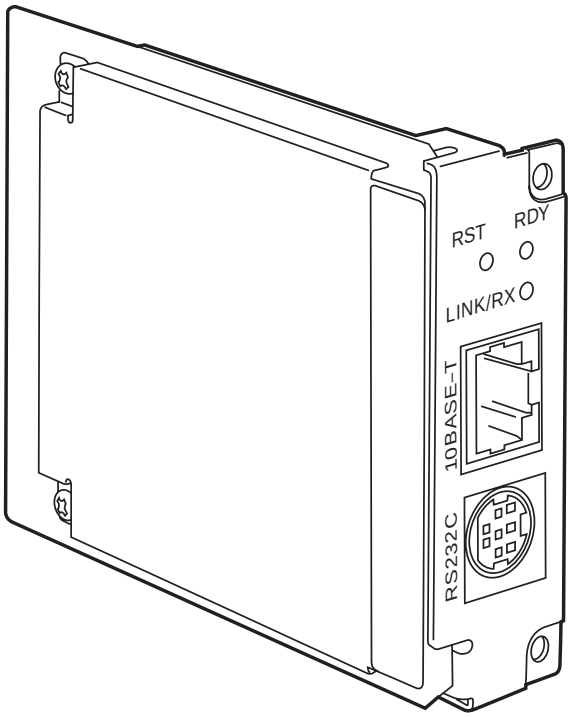
Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
C202	UPW1A221MEH	CAPACKTOR	1	
C211,12	ECUX1H101JCV	C.CAPACITOR CH 50V 100P	2	
C215-18	ECUX1H101JCV	C.CAPACITOR CH 50V 100P	4	
CN11	K1KA16A00018	CONNECTOR	1	
CN12	K2LC108B0018	CONNECTOR	1	
D201	B0HCMM000005	DIODE	1	
⚠ FS1	SSFC0.4A	FUSE	1	
L201	G1B101M00001	COIL 100UH	1	
L202	A1077EN	COIL	1	
LED1,D2	HLMP-1521	LED	2	
U201	M2596S-5.0	IC	1	
U202	LT1129CST3.3	IC	1	
U211	20F001N	IC	1	
		MISCELLANEOUS		
	M2635AQ	SHIELD PLATE	1	
	A1440JZ	SPACER	2	

ORDER NO. BSD0203M908
D12

Service Manual

WEB card

AW-PB309P/E



Panasonic

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicans. Any attempt to service or repair the product or products deal with in this service manual by anyone else could result in serious injury or death.

AW-PB309P

Specifications and accessories

Specifications

Power supply	**:**	**DC 12 V (supplied from camera unit)**
Power consumption	**:**	**1.9 W**

▭ indicates safety information.

Dimensions (W × H × D)	**:**	**3-5/8″ × 2-3/4″ × 7/8″ (92 × 70 × 21.5 mm)**	
Weight	**:**	**0.22 lbs (100 g)**	
Image compression system	**:**	**JPEG**	
Image quality	**:**	**3-level setting**	
Screen size	**:**	**640 × 480, 320 × 240, 640 × 240**	
Image updating interval	**:**	**15 images/sec. for 320 × 240**	
		7.5 images/sec. for 640 × 480, 640 × 240	
I/O connectors	**:**	**10 BASE-T**	**RJ-45 connector × 1 (connected to Ethernet 10BASE-T)**
		RS-232C	**Mini DIN 8-pin connector × 1 (for camera, pan/tilt head control)**
LED displays	**:**	**RDY**	**Green LED indicating that the WEB card is operating**
		LINK/RX	**Green LED indicating Ethernet connection status, flashes during communication**
Switch	**:**	**RST**	**Pushbutton switch for restoring factory settings**
Usable temperature range	**:**	**14°F to 113°F (–10°C to +45°C)**	
Humidity	**:**	**30% to 90%**	

Accessories

Operating Instructions	**:**	**× 1**
Screws (6 mm long)	**:**	**× 2**
(8 mm long)	**:**	**× 4**

AW-PB309E

Specifications and accessories

Specifications

Power supply	:	DC 12 V (supplied from camera unit)
Power consumption	:	1.9 W

indicates safety information.

Dimensions (W × H × D)	:	92 × 70 × 21.5 mm	
Weight	:	100 g	
Image compression system	:	JPEG	
Image quality	:	3-level setting	
Screen size	:	640 × 480, 320 × 240, 640 × 240	
Image updating interval	:	15 images/sec. for 320 × 240	
		7,5 images/sec. for 640 × 480, 640 × 240	
I/O connectors	:	10 BASE-T	RJ-45 connector × 1 (connected to Ethernet 10BASE-T)
		RS-232C	Mini DIN 8-pin connector × 1 (for camera, pan/tilt head control)
LED displays	:	RDY	Green LED indicating that the WEB card is operating
		LINK/RX	Green LED indicating Ethernet connection status, flashes during communication
Switch	:	RST	Pushbutton switch for restoring factory settings
Usable temperature range	:	–10°C to +45°C	
Humidity	:	30% to 90%	

Accessories

Operating Instructions	:	× 1
Screws (6 mm long)	:	× 2
(8 mm long)	:	× 4

SAFETY PRECAUTIONS

GENERAL GUIDELINES

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
3. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

LEAKAGE CURRENT COLD CHECK

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohm meter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. The resistance value must be more than 5MΩ.

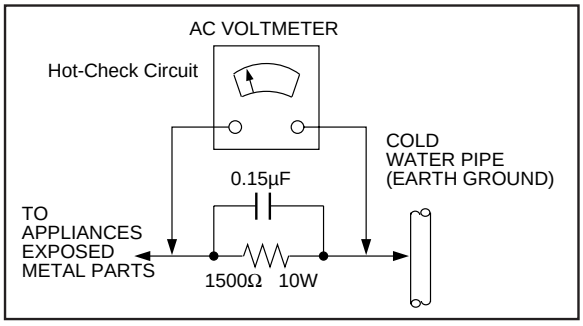


Figure1

LEAKAGE CURRENT HOT CHECK (See Figure 1)

1. Plug the AC cord directly into the AC outlet.
   Do not use an isolation transformer for this check.
2. Connect a 1.5kΩ , 10W resistor, in parallel with a 0.15µF capacitor, between each exposed metallic part on the set an a good earth ground such as a water pipe, as shown in Figure1.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverses the AC plug in the AC outlet repeat each of the above measurements.
6. The potential at any point should not exceed 0.15 volts RMS. A leakage current tester (Simpson Model 229 equivalent) may be used to make the hot checks, leakage current must not exceed 0.1 milliamp. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically sensitive (ED) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor “chip” components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground.
   Alternatively, obtain and wear a commercially available discharging wrist trap device, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device classified as “anti-static” can generate electrical charges sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it.
   (most replacement ES devices are package with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
   CAUTION : Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpacked replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device).

X-RADIATION

WARNING

1. The potential source of X-radiation in EVF sets is the High Voltage section and the picture tube.
2. When using a picture tube test jig for service, ensure that jig is capable of handling 10kV without causing x-radiation.

Note : It is important to use an accurate periodically calibrated high voltage meter.

3. Measure the High Voltage. The meter (electric type) reading should indicate 2.5kV, ± 0.15kV. If the meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure. To prevent an x-radiation possibility, it is essential to use the specified picture tube.

Panasonic

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